



Search Report

EIC 1700

STIC Database Tracking Number: 239442

To: RIP LEE
Location: REM-10A21
Art Unit: 1796
Friday, October 05, 2007

Case Serial Number: 10/518935

From: USHA SHRESTHA
Location: EIC1700
REM-4B28 / REM-4B31
Phone: (571)272-3519

usha.shrestha@uspto.gov

Search Notes

Examiner LEE:

Please see the search results, feel free to contact me if you have any questions or if you like to refine the search query. Thank you for using STIC services!

Regards,
Usha





STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
➤ Relevant prior art *found*, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art *not found*:

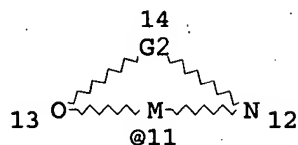
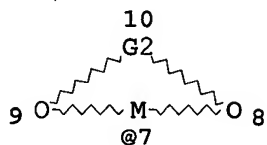
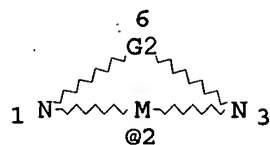
- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

=> d que 127

L1 SCR 2040 AND 1918
 L2 SCR 2043 OR 2017 OR 2021 OR 2026
 L3 STR



G1 15

VAR G1=2/7/11
 REP G2=(1-2) A
 NODE ATTRIBUTES:
 NSPEC IS R AT 2
 NSPEC IS R AT 7
 NSPEC IS R AT 11
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 13

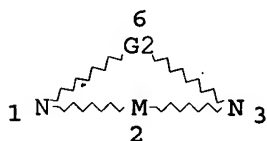
STEREO ATTRIBUTES: NONE
 L4 552687 SEA FILE=REGISTRY SSS FUL L3 AND L1 NOT L2
 L5 STR

G1 1 @2 N + @3 C + @4 K + @5 Na +

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 CHARGE IS *+ AT 2
 CHARGE IS *+ AT 3
 CHARGE IS *+ AT 4
 CHARGE IS *+ AT 5
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

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STEREO ATTRIBUTES: NONE
 L7 STR

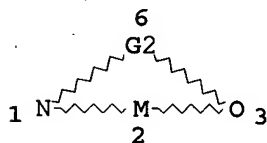


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 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 4

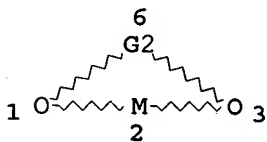
STEREO ATTRIBUTES: NONE
L8 STR



REP G2=(1-2) A
NODE ATTRIBUTES:
NSPEC IS R AT 2
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 4

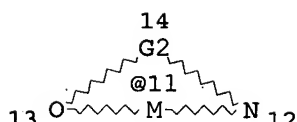
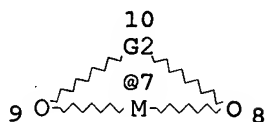
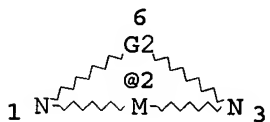
STEREO ATTRIBUTES: NONE
L9 STR



REP G2=(1-2) A
NODE ATTRIBUTES:
NSPEC IS R AT 2
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE
L12 STR



G1 15

VAR G1=2/7/11
REP G2=(1-2) A
NODE ATTRIBUTES:
CHARGE IS *- AT 2
CHARGE IS *- AT 7
CHARGE IS *- AT 11
NSPEC IS R AT 2
NSPEC IS R AT 7
NSPEC IS R AT 11
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 13

STEREO ATTRIBUTES: NONE

L14 26623 SEA FILE=REGISTRY SUB=L4 SSS FUL L5
L16 26623 SEA FILE=REGISTRY SUB=L14 SSS FUL (L7 OR L8 OR L9)
L18 263 SEA FILE=REGISTRY SUB=L16 SSS FUL L12
L19 112 SEA FILE=HCAPLUS ABB=ON PLU=ON L18
L20 95 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND (1840-2002)/PRY,AY
,PY
L21 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND CAT/RL
L22 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND CAT/RL
L23 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND PHARM?/SC,SX
L24 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND CAT?
L25 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND POLYMER?
L26 24 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND COORDINAT?
L27 36 SEA FILE=HCAPLUS ABB=ON PLU=ON (L21 OR L22 OR L23 OR L24
OR L25 OR L26)

=> d l27 1-36 ibib ed abs hitstr hitind

L27 ANSWER 1 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:210311 HCAPLUS

DOCUMENT NUMBER: 146:470762

TITLE: Two new inorganic-organic hybrid single pendant
hexadecavanadate derivatives with bifunctional
electrocatalytic activities

AUTHOR(S): Dong, Baoxia; Peng, Jun; Tian, Aixiang; Sha,
Jingquan; Li, Li; Liu, Hongsheng

CORPORATE SOURCE: Key Laboratory of Polyoxometalate Science of
Ministry of Education, Faculty of Chemistry,
Northeast Normal University, Changchun, 130024,
Peop. Rep. China

SOURCE: Electrochimica Acta (2007), 52(11), 3804-3812
CODEN: ELCAAV; ISSN: 0013-4686

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 27 Feb 2007

AB Two new supramol. assembly hexadecavanadate derivs. of
H2[Cd(phen)3]2{[Cd(H2O)(phen)2](V16O38Cl)}·2.5H2O (1) (phen =
1,10'-phenanthroline) and H2[Cd(bipy)3][Cd(H2O)(bipy)2]{[Cd(H2O)(bipy)
2](V16O38Cl)}·1.5H2O (2) (bipy = 2,2'-bipyridine), were prepared
under mild hydrothermal conditions and structurally characterized by
IR, XPS spectra, TG analyses and single-crystal x-ray diffraction.
Compds. 1 and 2 are constructed from single pendant [CdL2] (L = phen,
1 and L = bipy, 2) modified hexadecavanadates. The hybrids 1 and 2
were used as solid bulk modifier to fabricate bulk-modified C paste
electrodes (CPEs) (1-CPE and 2-CPE) by direct mixing. The
electrochem. behaviors and electrocatalysis of 1-CPE and 2-CPE
indicate bifunctional electrocatalytic activities toward both the
oxidation and reduction of nitrite. Also, their electrocatalytic activities
toward the reduction of bromate and oxidation of ascorbic acid are also
studied in 1 M H2SO4 aqueous solns.

IT 935272-52-9

(cyclic voltammetry in sulfuric acid solution of carbon paste
electrode modified with)

RN 935272-52-9 HCAPLUS
 CN Methanaminium, N,N,N-trimethyl-, μ 6-chlorotri- μ -oxooctadeca-
 μ 3-oxopentadeca-oxopentadecavanadate(6-), hydrate (6:1:7) (CA INDEX
 NAME)

CM 1

CRN 110550-45-3

CMF C4 H12 N . 1/6 Cl O36 V15

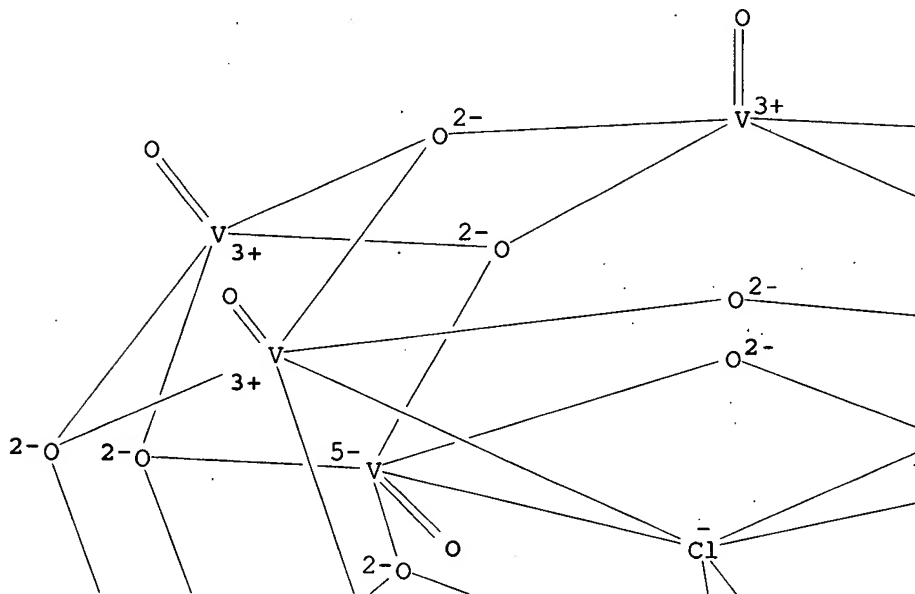
CM 2

CRN 441286-66-4

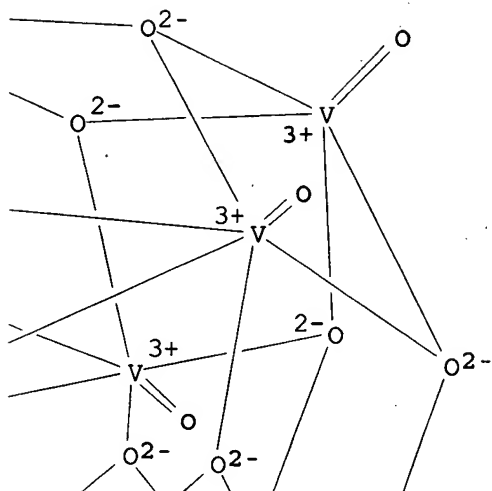
CMF Cl O36 V15

CCI CCS

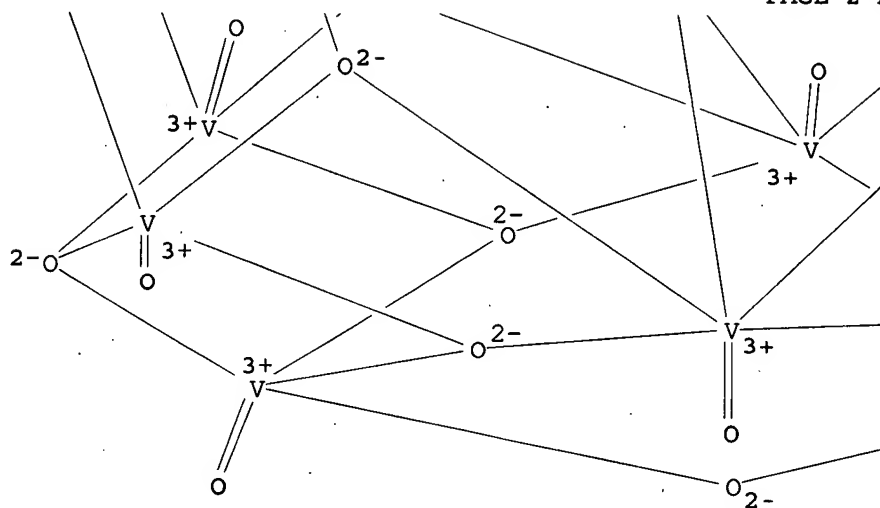
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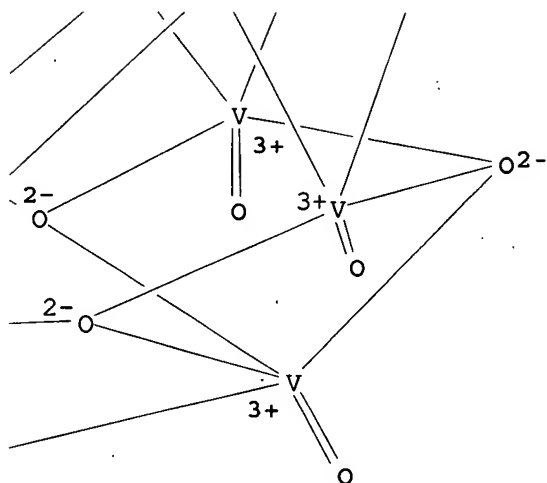
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PAGE 2-A



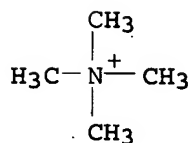
PAGE 2-B



CM 3

CRN 51-92-3

CMF C4 H12 N



CC 72-2 (Electrochemistry)

Section cross-reference(s): 22, 67, 75, 78

IT 935272-52-9

(cyclic voltammetry in sulfuric acid solution of carbon paste electrode modified with)

REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27. ANSWER 2 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:772539 HCAPLUS

DOCUMENT NUMBER: 136:256234

TITLE: A new family of microporous vanadium phosphates and related compounds with organic coordination

AUTHOR(S): Feng, Shouhua; Shi, Zhan; Zhang, Lirong; Zhao, Hui; Zhang, Dong; Dai, Zhimin

CORPORATE SOURCE: Key Laboratory of Inorganic Synthesis and Preparative Chemistry, Jilin University, Changchun, 130023, Peop. Rep. China

SOURCE: Studies in Surface Science and Catalysis (2001), 135(Zeolites and Mesoporous Materials at the Dawn of the 21st Century), 3432-3439

CODEN: SSCTDM; ISSN: 0167-2991

USHA SHRESTHA EIC 1700 REM 4B31

PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
OTHER SOURCE(S): CASREACT 136:256234
ED Entered STN: 25 Oct 2001
AB A new family of microporous vanadium phosphates and related compds. with organic coordination were hydrothermally crystallized and their crystal structures were characterized by single crystal x-ray diffraction. The hydrothermal preparation of $[M(4,4'\text{-bipy})_2(VO_2)_2(HPO_4)_2]$ ($M = Co, Ni$) and $V_2PO_8F_{10}$ are described and the crystal structures of these and other related compds. are presented and discussed. Structural diversity of these open inorg.-organic hybrid materials derives from considerable variables for both inorg. and organic parts from the point of view of syntheses and structures. Current study in this field shows great challenges not only in the crystal chemical of microporous materials but also in biol. properties such as helical arrays and ligand exchange.

IT 403498-46-4
(crystal structure)

RN 403498-46-4 HCAPLUS

CN Vanadate(16-), $[\mu_{12}\text{-[hexakis}\{\mu\text{-[orthoborato}(3\text{-})\text{-}\kappa O:\kappa O']\}\text{hexa-}\mu\text{-oxododecaoxododecaborato}(30\text{-})\}\}\text{hexa-}\mu_3\text{-oxododecaoxododeca-}, \text{undecaoxonium disodium trihydrogen, tetrahydrate (9CI) (CA INDEX NAME)}$

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75

IT 301662-96-4 301663-00-3 301663-05-8 403498-46-4
(crystal structure)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 3 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:168995 HCAPLUS

DOCUMENT NUMBER: 135:70026

TITLE: Cation-induced assembly of the first mixed molybdenum-vanadium hexadecametal host shell cluster anions

AUTHOR(S): Xu, Yan; Zhu, Dun-Ru; Guo, Zi-Jian; Shi, Yu-Jun; Zhang, Kou-Lin; You, Xiao-Zeng

CORPORATE SOURCE: Coordination Chemistry Institute, State Key Laboratory of Coordination Chemistry, Nanjing University, Nanjing, 210093, Peop. Rep. China

SOURCE: Journal of the Chemical Society, Dalton

Transactions (2001), (6), 772-773

CODEN: JCSDA; ISSN: 1472-7773

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 135:70026

ED Entered STN: 12 Mar 2001

AB Two novel hexadeca-metal oxygen cluster compds., $\{Ni[(NH_2)_2(C_2H_4)_2NH]_2\}_3[PMoVI_5MoV_3VIV_8O_{44}] \cdot [(NH_2)_2(C_2H_4)_2NH] \cdot n$ $t\dot{o}d\cdot H_2O$ (1) and $\{Co[(NH_2)_2(C_2H_4)_2NH]_2\}_2Na[PMoVI_6MoV_2VIV_8O_{44}] \cdot 8 H_2O$ (2) were synthesized by a hydrothermal method, and characterized by x-ray crystallog. The anion of 1 has a novel tetra-capping mode and the 1st hexadecametal-O host shell is observed in 2.

IT 345349-04-4P

(preparation and crystal structure)

RN 345349-04-4 HCAPLUS
 CN Cobalt(2+), bis[N-[2-(amino-κN)ethyl]-1,2-ethanediamine-κN,κN']-, sodium hexadeca-μ₃-oxooctaaxo[μ₁₂-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO':κO':κO':κO':κO']]]bis(tetra-μ-oxotetraoxotetramolybdate)octavanadate(5-) (2:1:1), octahydrate (9CI) (CA INDEX NAME)

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CRN 345349-03-3

CMF C8 H26 Co N6 . 1/2 Mo8 O44 P V8 . 1/2 Na

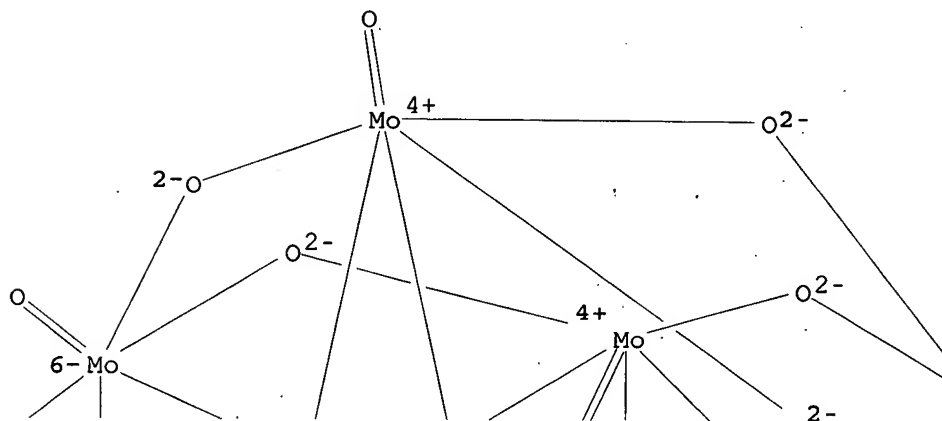
CM 2

CRN 227002-62-2

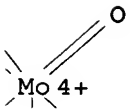
CMF Mo8 O44 P V8

CCI CCS

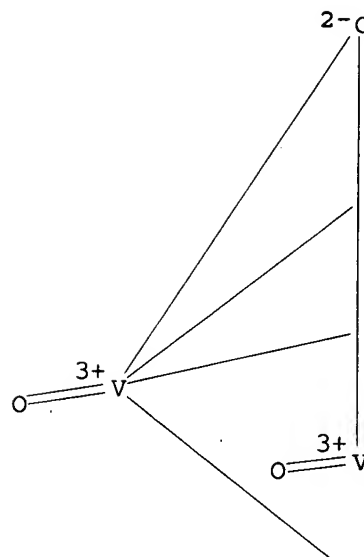
PAGE 1-B



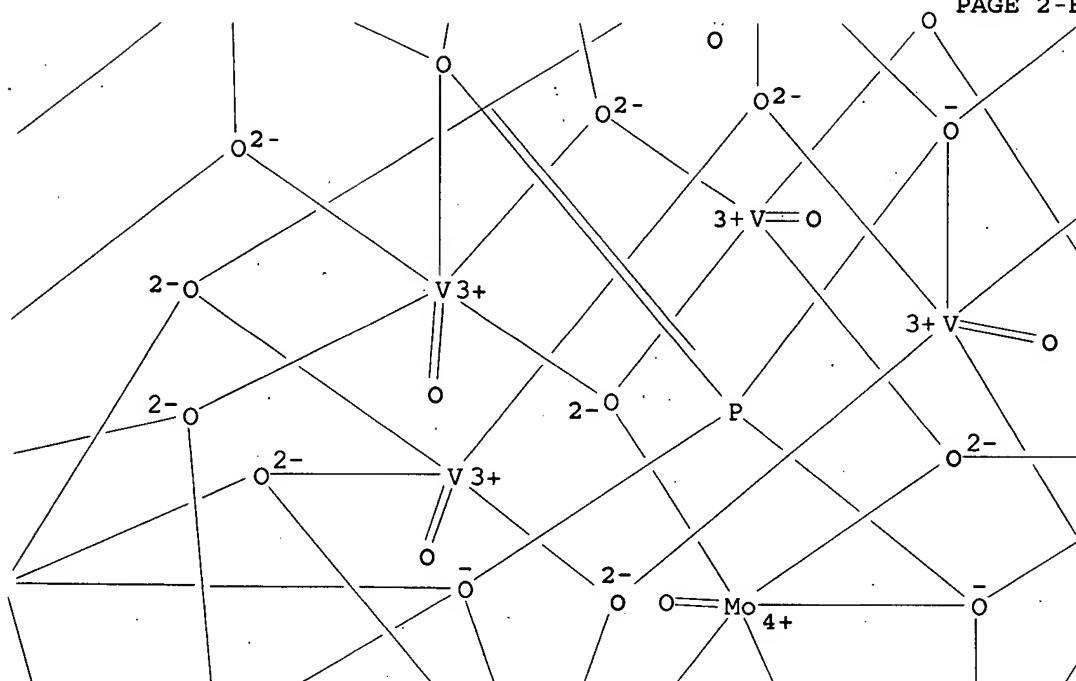
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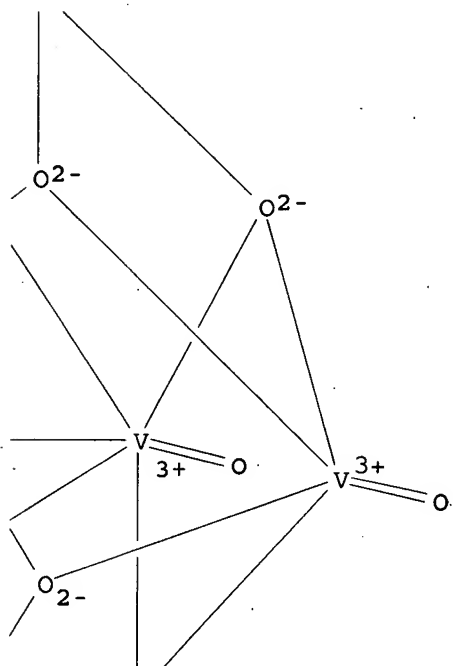
PAGE 2-A



PAGE 2-B



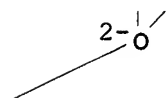
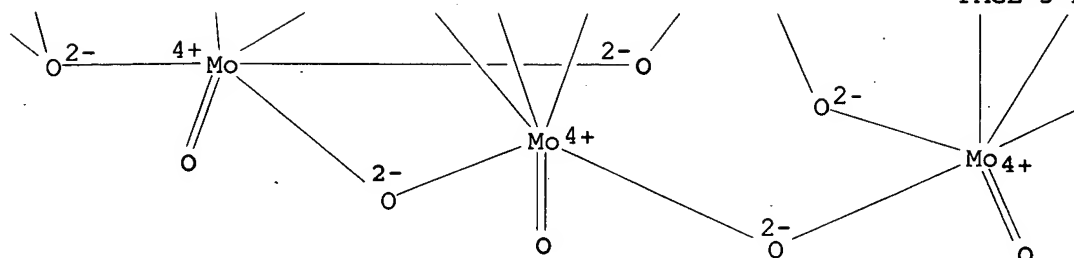
PAGE 2-C



PAGE 3-A

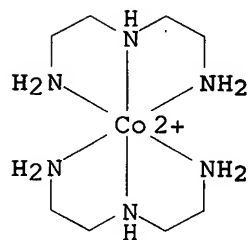
PAGE 3-B

PAGE 3-C



CM 3

CRN 23624-01-3
 CMF C8 H26 Co N6
 CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 345349-01-1P 345349-04-4P

(preparation and crystal structure)

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
 RE FORMAT

L27 ANSWER 4 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:98126 HCAPLUS

DOCUMENT NUMBER: 134:304589

TITLE: Electrosynthesis and solution structure of
 six-electron reduced forms of metatungstate,

USHA SHRESTHA EIC 1700 REM 4B31

[H2W12O40]6-

AUTHOR(S): Boskovic, Colette; Sadek, Maruse; Brownlee, Robert
T. C.; Bond, Alan M.; Wedd, Anthony G.

CORPORATE SOURCE: School of Chemistry, University of Melbourne,
Parkville, 3052, Australia

SOURCE: Journal of the Chemical Society, Dalton
Transactions (2001), (2), 187-196
CODEN: JCSDA; ISSN: 1472-7773

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 09 Feb 2001

AB Metatungstate salts α -[R4N]5H[H2W12O40] (R = Pr or Bu) were
produced by phase transfer methods. Two 1-electron reduction processes
(E1/2 -1100, -1590 mV vs. Ag-AgCl (saturated KCl in MeCN)) are seen for
[Bu4N]5H[H2W12O40] in MeCN (Bu4NClO4, 0.1M) solution. They convert into a
single two-electron process in MeCN-H2O (95:5 volume/volume) upon the
addition of acid. Controlled potential electrolysis in aqueous HCl at the
two potentials gave the six-electron reduced salt [NH4]4H8[H2W12O40]
in which one of the oxidized WVI3 trinuclear caps of metatungstate is
reduced to a WIV3 trinuclear cap. [Bu4N]3H9[H2W12O40] and related
salts were generated by phase transfer. [H2{WIV3(OH2)3}WVI9O34(OH)3]3-
was obtained by dissolving [Bu4N]3H9[H2W12O40] in dry CD3CN. The
distribution of the eleven protons present in this anion is mapped by
1H and 183W NMR, allowing assessment of the structural changes which
accompany reduction. Cs point symmetry is observed and imposed by the
association
of the three surface hydroxyl protons with the reduced WIV3 trinuclear
cap and one of the oxidized WVI3 trinuclear caps. Three WOW links
appear to be converted into longer W(OH)W links to accommodate the
significant shortening (≈ 0.7 Å) in W...W separation anticipated
to occur upon reduction.

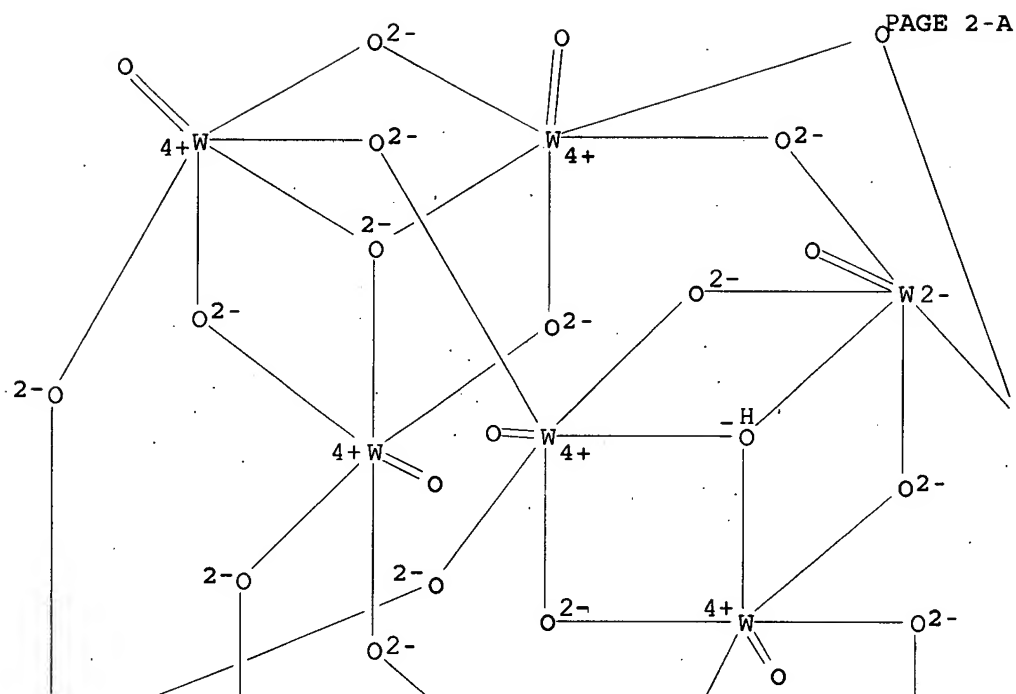
IT 334764-48-6DP, solid solution with tetraprotonated analog
334764-58-8DP, solid solution with tetraammonium analog
(preparation and cation exchange with tetrabutylammonium salt)

RN 334764-48-6 HCAPLUS

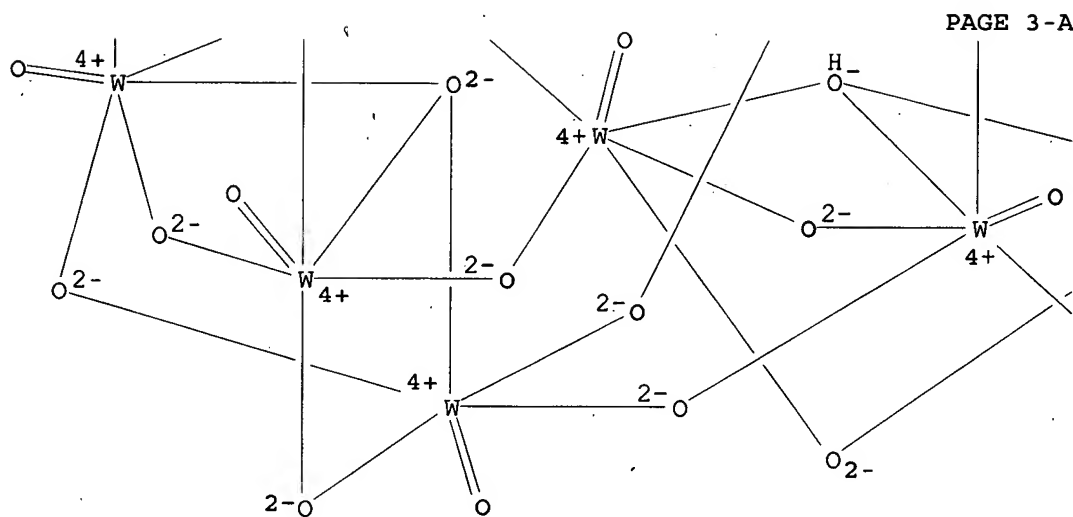
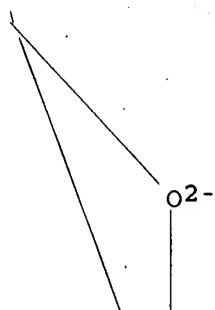
CN Tungstate (W(OH)2O3812-), tetraammonium octahydrogen (9CI) (CA INDEX
NAME)

PAGE 1-A

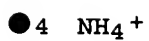
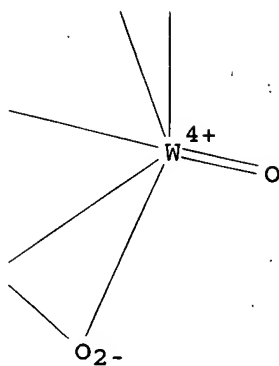
2-



PAGE 2-B

● 8 H⁺

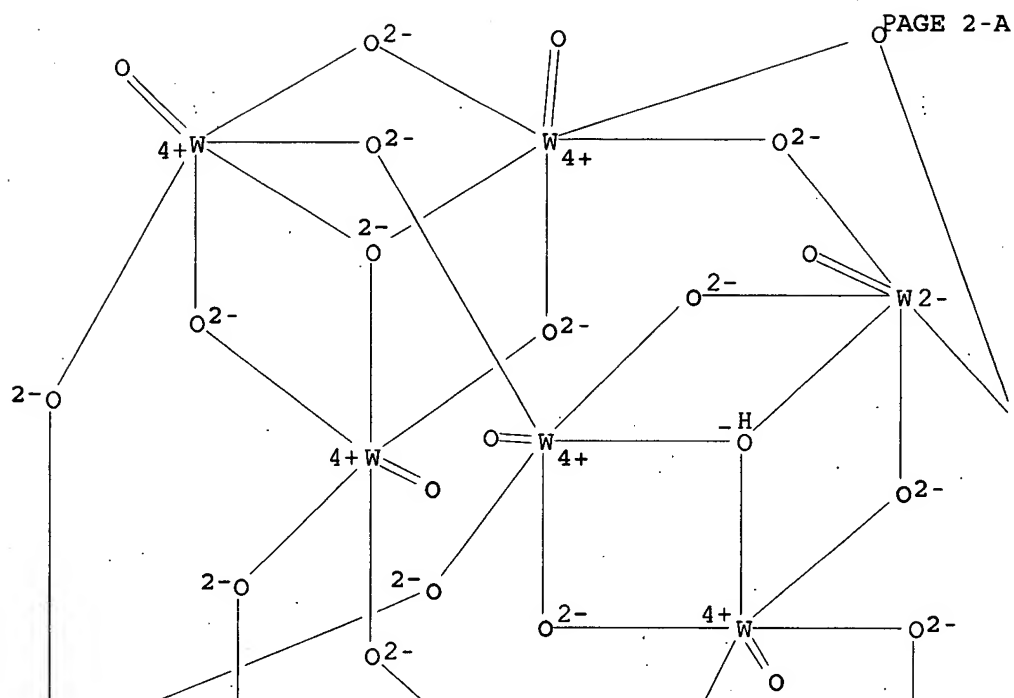
PAGE 3-B



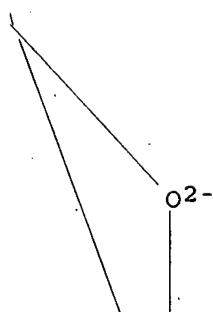
RN 334764-58-8 HCAPLUS
CN Tungstate (W12(OH)203812-), tetrasodium octahydrogen (9CI) (CA INDEX NAME)

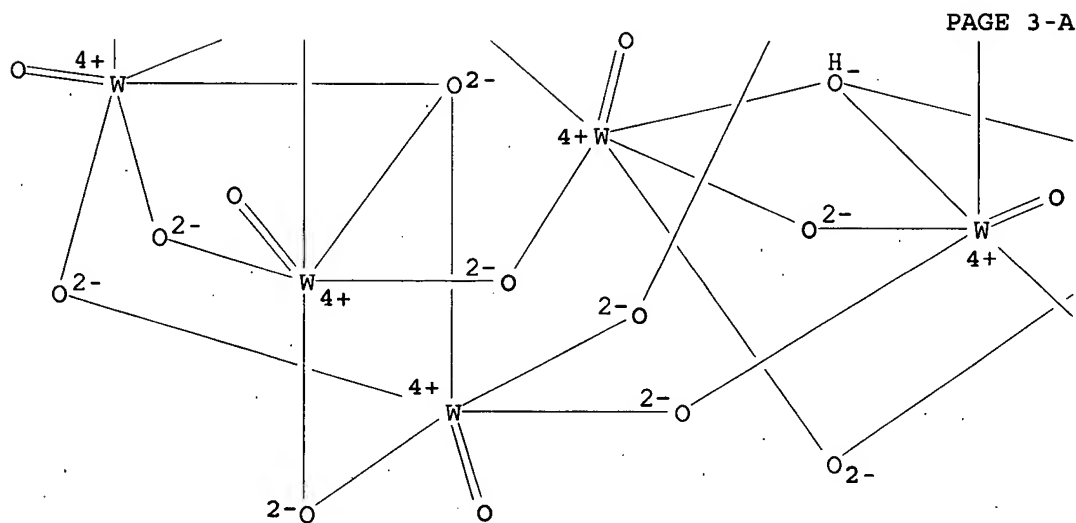
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- 2 -



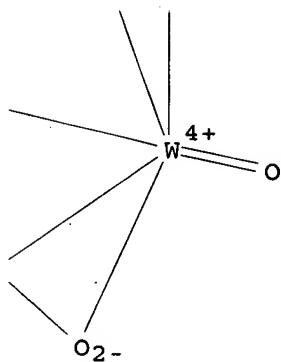
PAGE 2-B





● 8 H⁺

PAGE 3-B



● 4 Na⁺

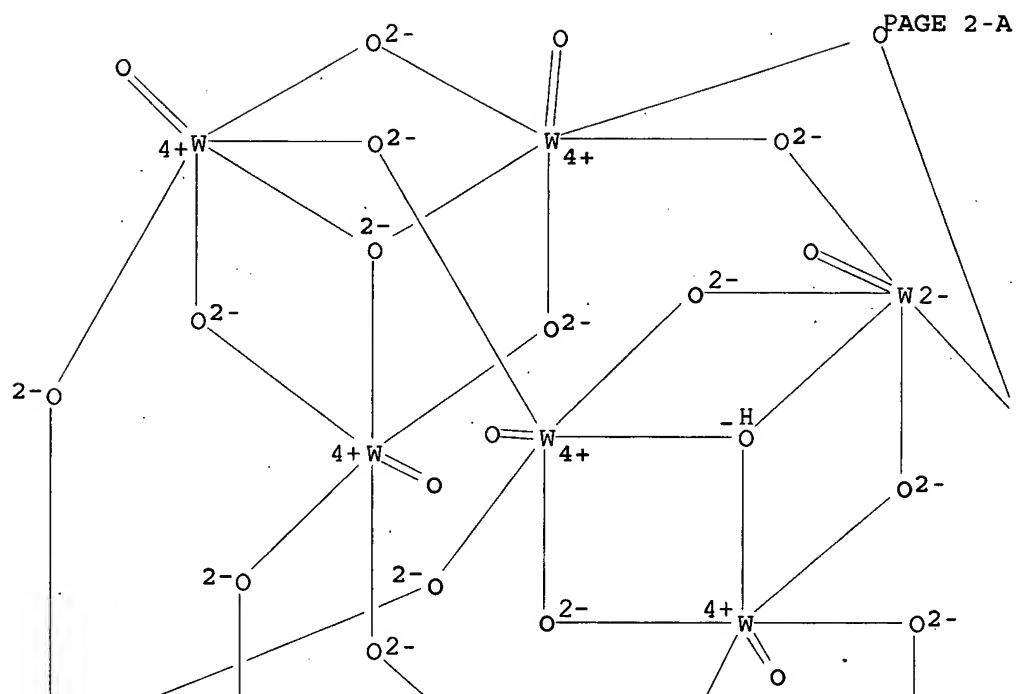
IT 334764-51-1P 334764-54-4P 334764-56-6DP,
solid solution with dodecaprotonated analog 334764-60-2DP,
solid solution with tetrasodium analog
(preparation of)
RN 334764-51-1 HCAPLUS
CN 1-Propanaminium, N,N,N-tripropyl-, hydrogen di-μ₃-hydroxytetracos-
μ-oxodi-μ₃-oxododecaoxododecatungstate(12-) (3:9:1) (9CI) (CA
INDEX NAME)

CM 1

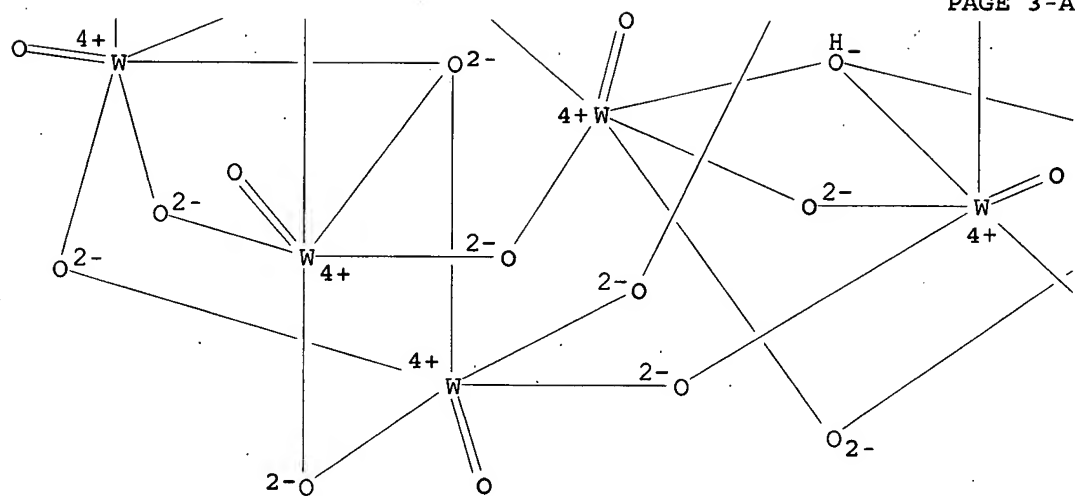
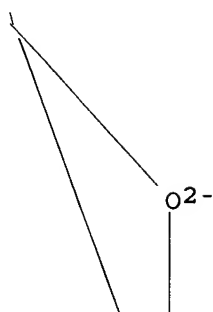
CRN 334764-50-0
CMF H2 O40 W12
CCI CCS

PAGE 1-A

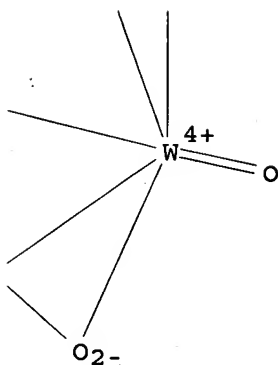
2-



PAGE 2-B



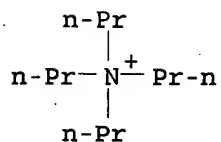
PAGE 3-B



CM 2

CRN 13010-31-6

CMF C12 H28 N



RN 334764-54-4 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, tetraphenylarsonium hydrogen
 di- μ 3-hydroxytetracos- μ -oxodi- μ 3-
 oxododecaoxododecatungstate(12-) (5:1:18:2) (9CI) (CA INDEX NAME)

CM 1

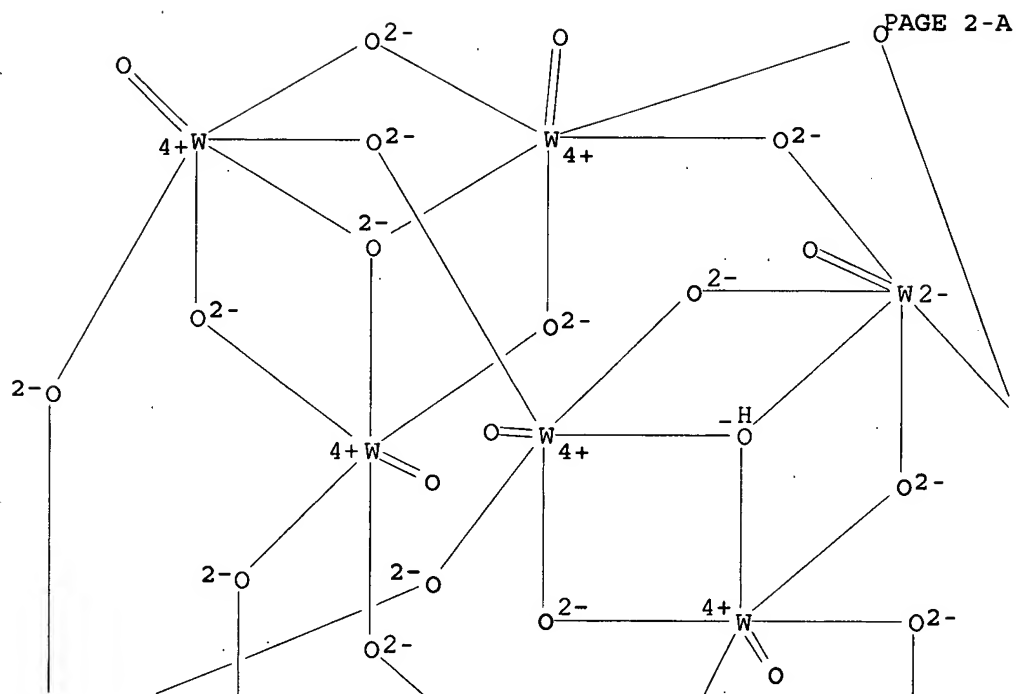
CRN 334764-50-0

CMF H2 O40 W12

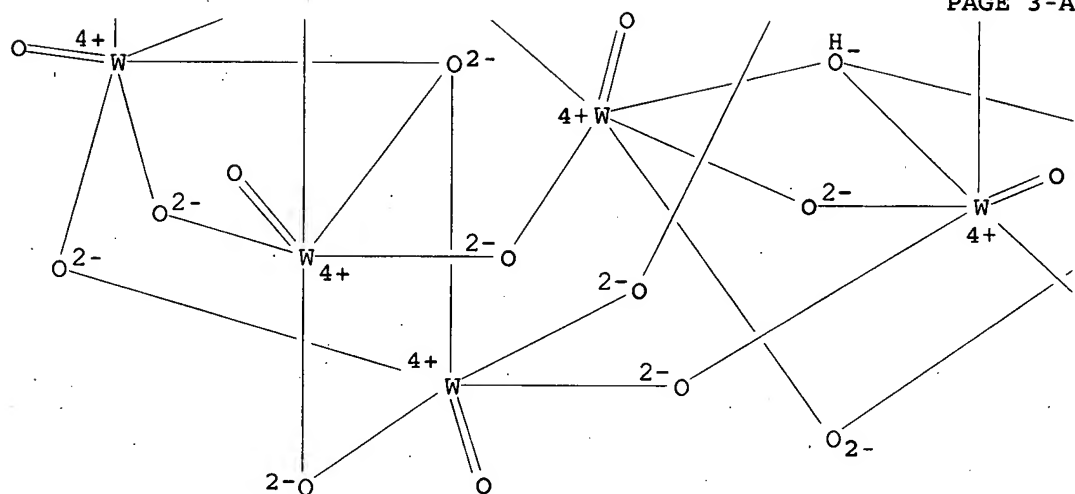
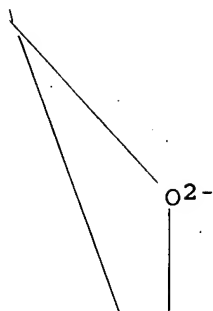
CCI CCS

PAGE 1-A

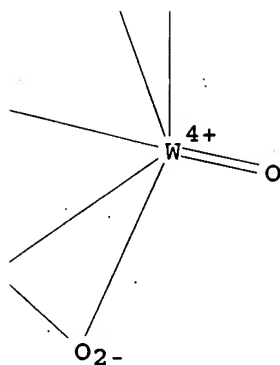
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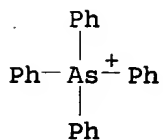
PAGE 3-B



CM 2

CRN 15912-80-8

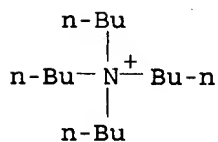
CMF C24 H20 As



CM 3

CRN 10549-76-5

CMF C16 H36 N



RN 334764-56-6 HCAPLUS

CN 1-Hexanaminium, N,N,N-trihexyl-, di-μ3-hydroxytetracosa-μ-oxodi-μ3-oxododecaoxododecatungstate(12-) (12:1) (9CI) (CA INDEX NAME)

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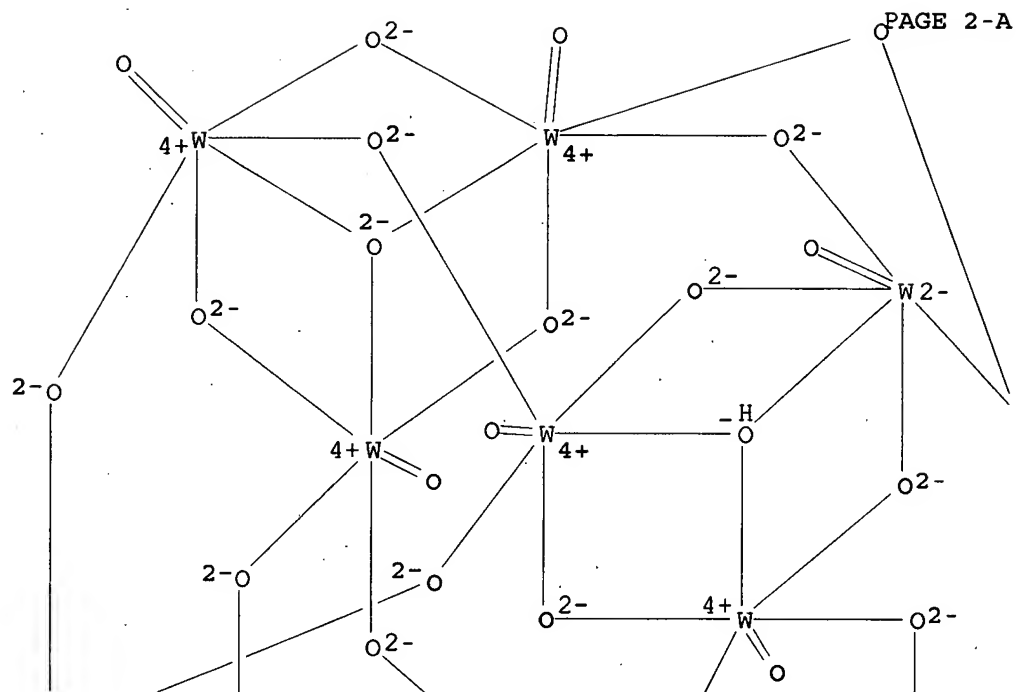
CRN 334764-50-0

CMF H2 O40 W12

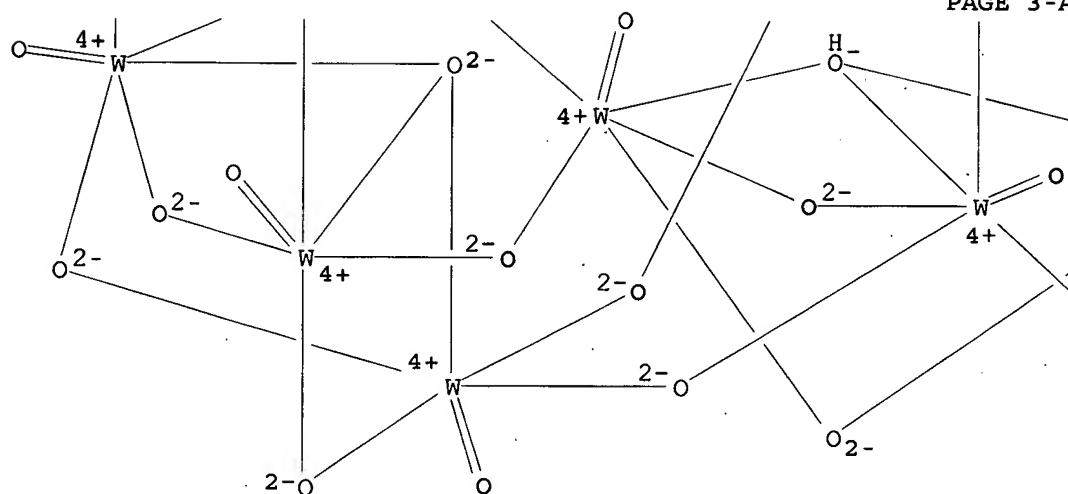
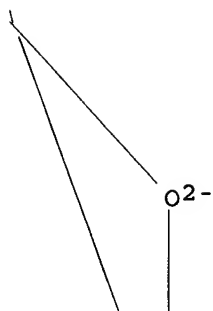
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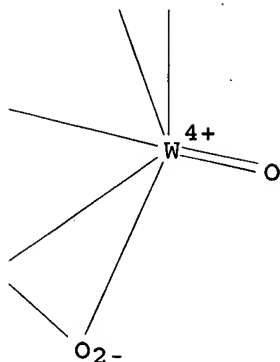
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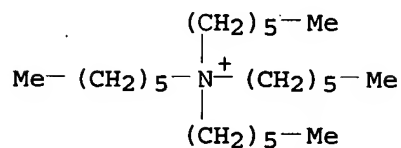
PAGE 3-B



CM 2

CRN 20256-54-6

CMF C24 H52 N



RN 334764-60-2 HCAPLUS

CN 1-Propanaminium, N,N,N-tripropyl-, hydrogen di- μ 3-hydroxytetracos-
 μ -oxodi- μ 3-oxododecaoxododecatungstate(12-) (4:8:1) (9CI) (CA
 INDEX NAME)

CM 1

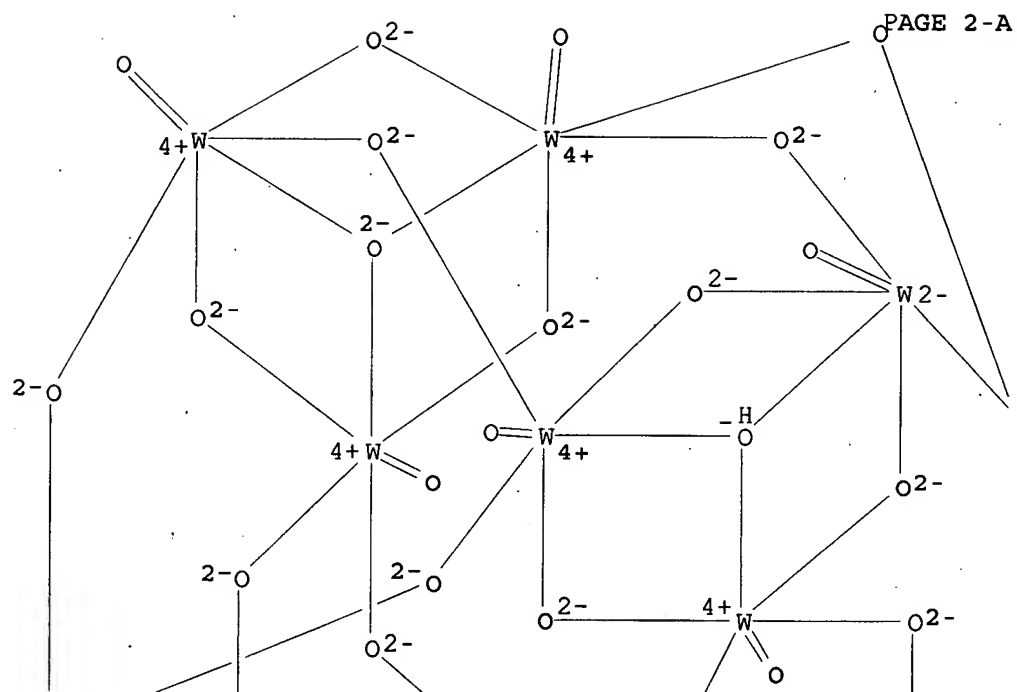
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CMF H2 O40 W12

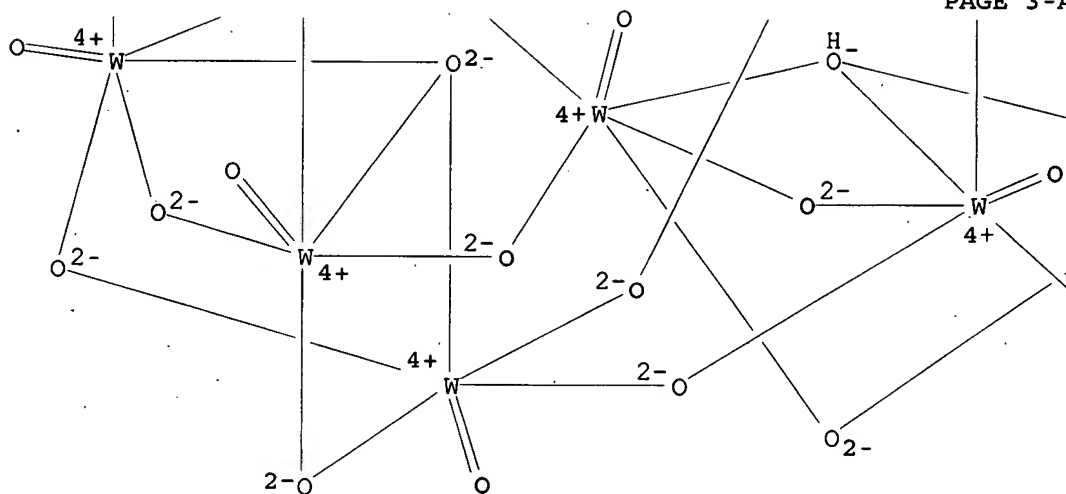
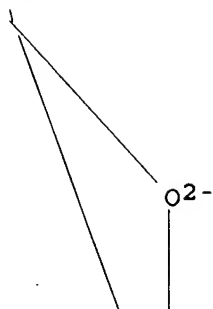
CCI CCS

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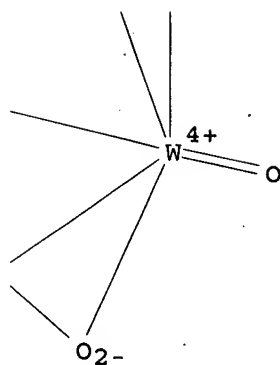
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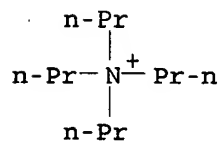
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CM 2

CRN 13010-31-6

CMF C12 H28 N



IT 334764-48-6P

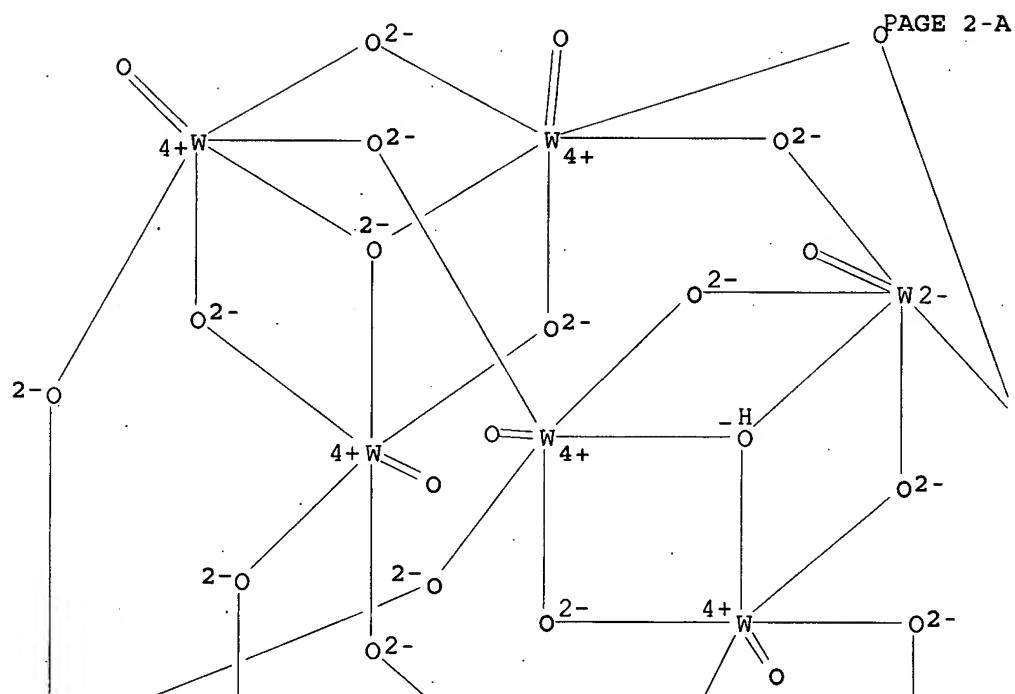
(preparation, electrochem. redox, proton and tungsten-183 NMR, and conversion to tetraalkylammonium salt by phase transfer method)

RN 334764-48-6 HCAPLUS

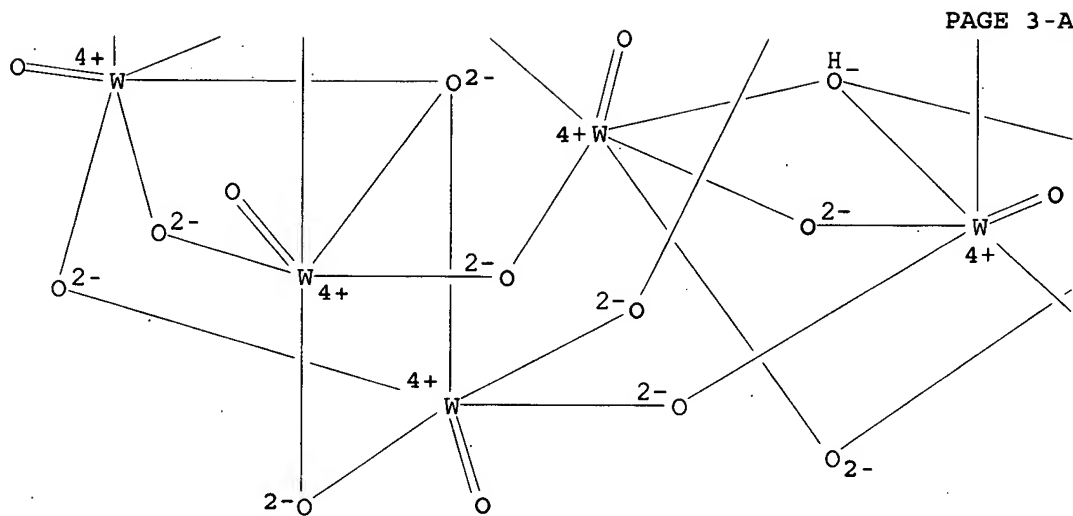
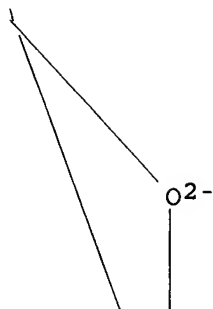
CN Tungstate (W(OH)2O3812-), tetraammonium octahydrogen (9CI) (CA INDEX NAME)

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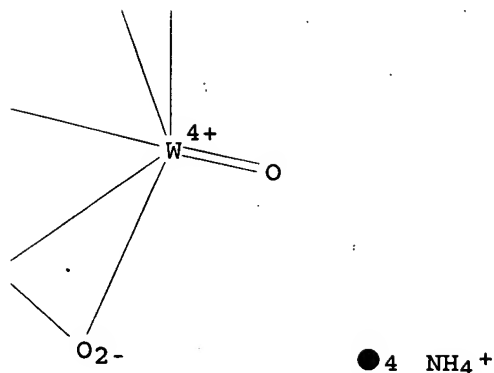
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● 8 H⁺

PAGE 3-B



- CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 72, 77
- IT 334764-48-6DP, solid solution with tetraprotonated analog
 334764-58-8DP, solid solution with tetraammonium analog
 (preparation and cation exchange with tetrabutylammonium salt)
- IT 166671-98-3P 334764-51-1P 334764-54-4P
 334764-56-6DP, solid solution with dodecaprotonated analog
 334764-60-2DP, solid solution with tetrasodium analog
 334764-61-3DP, solid solution with tetra(hexyl)ammonium analog
 (preparation of)
- IT 334764-48-6P
 (preparation, electrochem. redox, proton and tungsten-183 NMR, and
 conversion to tetraalkylammonium salt by phase transfer method)
- IT 223512-69-4P
 (preparation, proton and tungsten-183 NMR, and cation exchange
 with tetraalkylammonium and tetraphenylarsonium salts)

REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
 RE FORMAT

L27 ANSWER 5 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:531087 HCAPLUS

DOCUMENT NUMBER: 133:304920

TITLE: Unknown isopolyoxovanadate species detected by
 electrospray mass spectrometry

AUTHOR(S): Walanda, D. K.; Burns, R. C.; Lawrance, G. A.; von
 Nagy-Felsobuki, E. I.

CORPORATE SOURCE: School of Biological and Chemical Sciences, The
 University of Newcastle, Callaghan, 2308,
 Australia

SOURCE: Inorganica Chimica Acta (2000), 305(2),
 118-126

CODEN: ICHAA3; ISSN: 0020-1693

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 03 Aug 2000

AB Electrospray mass spectrometry (ES MS) was used to identify many
 previously unknown isopolyvanadate anions and cations in aqueous
 solns. under nonequil. conditions. There is direct evidence that the
 evaporation process in ES MS resulted in significant chemical effects, thereby
 generating many of these previously undetected species. As a
 consequence, ES MS offers insight into the polymerization process.

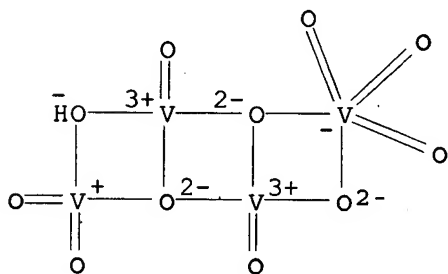
For the ammonium metavanadate system, neg.-ion ES MS yielded two series, namely: $[H_xV_yO_z]^-$ ($x = 0$ to 1 ; $y = 1$ to 10 ; $z = 3$ to 26) and $[H_xV_yO_z]^{2-}$ ($x = 0, 1$; $y = 3$ to 17 ; $z = 9$ to 44). Also, the $[H_2VO_4]^-$, $[V_{10}O_{28}]^{6-}$ and $[H_5V_{10}O_{28}]^-$ anions were detected. In the pos.-ion mode, three series of polyoxovanadate cations were observed, namely: $[Hm+1(VO_3)_m]^+$, $[Hm-1VmO_3m-1]^+$ and $[Hm-3VmO_3m-2]^+$. For the alkali metal metavanadate systems ions $[AVmO_3m-2]^-$ ($m = 2, 4, 6$; $A = Li^+, Na^+$ and K^+) were detected. In the pos.-ion mode, at least two series $[Am+1(VO_3)_m]^+$ and $[Am+3VmO_3m+1]^+$ were observed. In all series, the protonated and unprotonated ions differed by $\{V_2O_5\}$ mass units (characterized by ES MS as the formal building block in these clusters). At high cone-voltages, mixed-valence polyoxovanadate anions were observed for all the systems studied. However, for the pos.-ion mode, the only mixed-valence polyoxovanadates cations detected were for the K system.

IT 300685-29-4 300685-45-4 300711-86-8
 300711-87-9 300713-97-7 300713-98-8
 300714-13-0 300714-14-1 300714-97-0
 300714-98-1 300714-99-2 300715-00-8
 300715-01-9 300715-02-0 300715-03-1
 300715-06-4 300715-11-1 300715-13-3
 300715-23-5 300715-27-9 300715-29-1
 300715-30-4 300715-31-5 300715-32-6
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 300715-38-2 300715-40-6 300765-39-3
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 300765-43-9 300765-44-0 300765-45-1
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 300765-49-5

(unknown isopolyoxovanadate species detected by electrospray mass spectrometry)

RN 300685-29-4 HCAPLUS

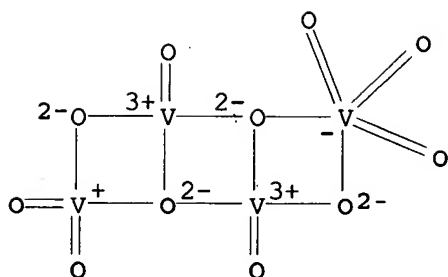
CN Vanadate (V4(OH)O101-), ammonium, stereoisomer (9CI) (CA INDEX NAME)



● NH_4^+

RN 300685-45-4 HCAPLUS

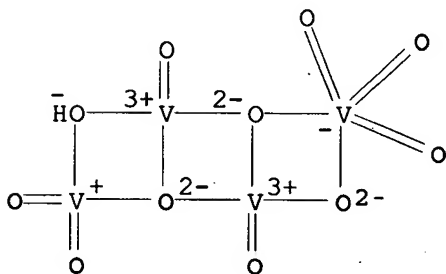
CN Vanadate (V4O112-), diammonium, stereoisomer (9CI) (CA INDEX NAME)



● 2 NH₄⁺

RN 300711-86-8 HCAPLUS

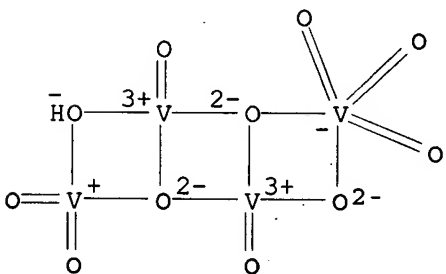
CN Vanadate (V₄(OH)O₁₀1-), sodium, stereoisomer (9CI) (CA INDEX NAME)



● Na⁺

RN 300711-87-9 HCAPLUS

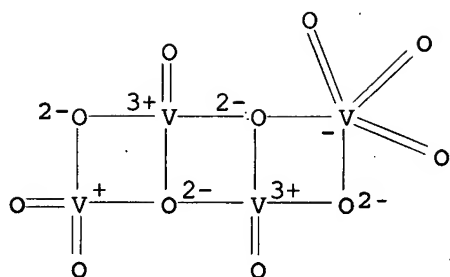
CN Vanadate (V₄(OH)O₁₀1-), potassium, stereoisomer (9CI) (CA INDEX NAME)



● K⁺

RN 300713-97-7 HCAPLUS

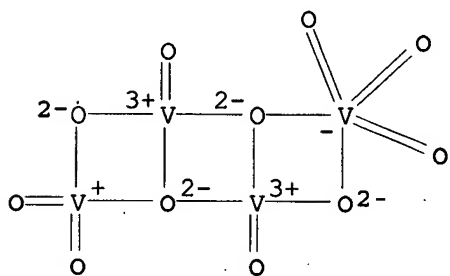
CN Vanadate (V₄O₁₁2-), disodium, stereoisomer (9CI) (CA INDEX NAME)



● 2 Na⁺

RN 300713-98-8 HCAPLUS

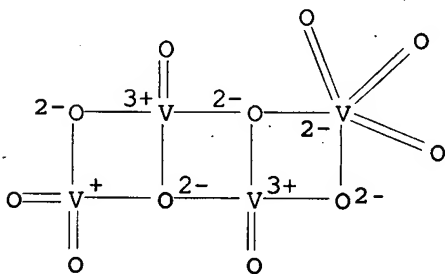
CN Vanadate (V40112-), dipotassium, stereoisomer (9CI) (CA INDEX NAME)



● 2 K⁺

RN 300714-13-0 HCAPLUS

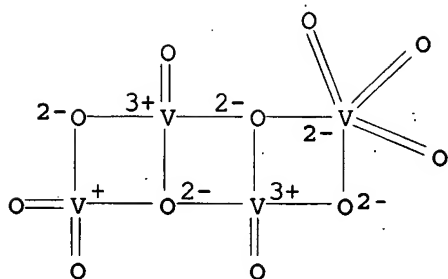
CN Vanadate (V40113-), trisodium, stereoisomer (9CI) (CA INDEX NAME)



● 3 Na⁺

RN 300714-14-1 HCAPLUS

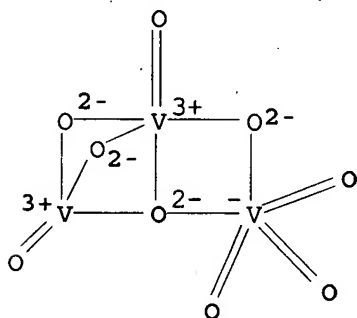
CN Vanadate (V40113-), tripotassium, stereoisomer (9CI) (CA INDEX NAME)



● 3 K⁺

RN 300714-97-0 HCAPLUS

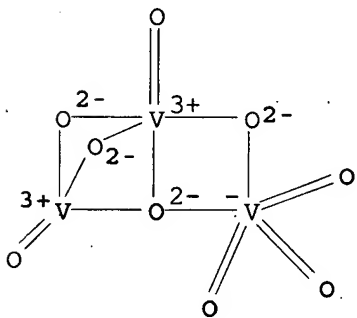
CN Vanadate (V3093-), tetrasodium, stereoisomer (9CI) (CA INDEX NAME)



● 4 Na⁺

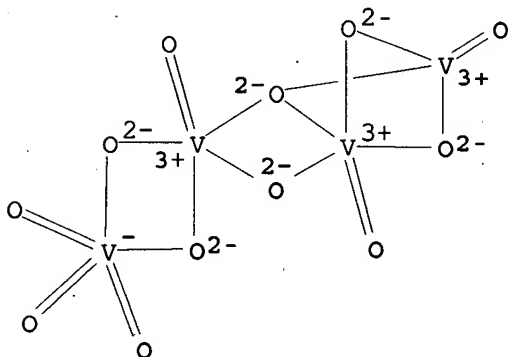
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CN Vanadate (V3093-), tetrapotassium, stereoisomer (9CI) (CA INDEX NAME)



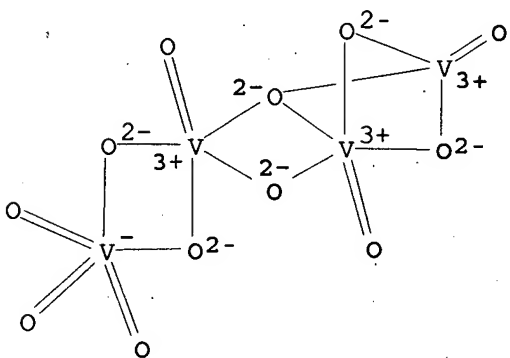
● 4 K⁺

RN 300714-99-2 HCAPLUS
CN Vanadate (V4O124-), pentasodium, stereoisomer (9CI) (CA INDEX NAME)



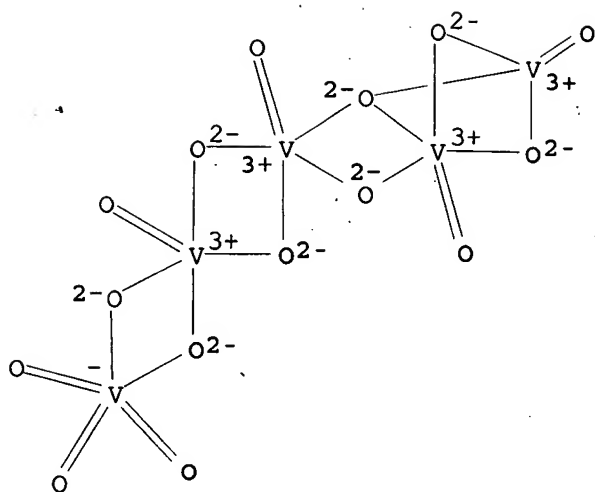
●5 Na⁺

RN 300715-00-8 HCAPLUS
CN Vanadate (V4O124-), pentapotassium, stereoisomer (9CI) (CA INDEX NAME)



●5 K⁺

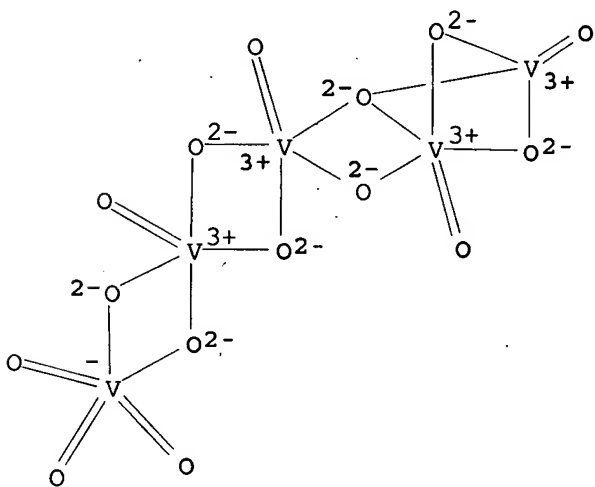
RN 300715-01-9 HCAPLUS
CN Vanadate (V5O155-), hexasodium, stereoisomer (9CI) (CA INDEX NAME)



● 6 Na⁺

RN 300715-02-0 HCAPLUS

CN Vanadate (V50155-), hexapotassium, stereoisomer (9CI) (CA INDEX NAME)

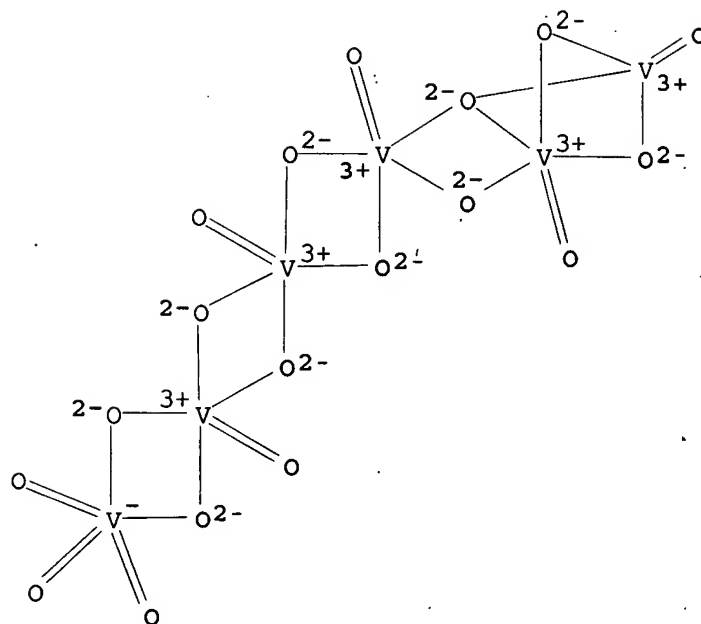


● 6 K⁺

RN 300715-03-1 HCAPLUS

CN Vanadate (V60186-), heptasodium, stereoisomer (9CI) (CA INDEX NAME)

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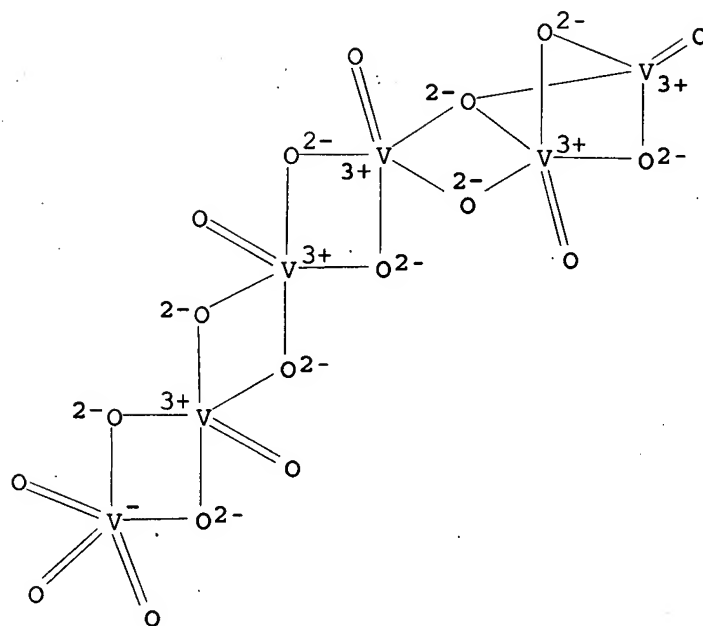


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● 7 Na⁺

RN 300715-06-4 HCAPLUS
CN Vanadate (V60186-), heptapotassium, stereoisomer (9CI) (CA INDEX NAME)

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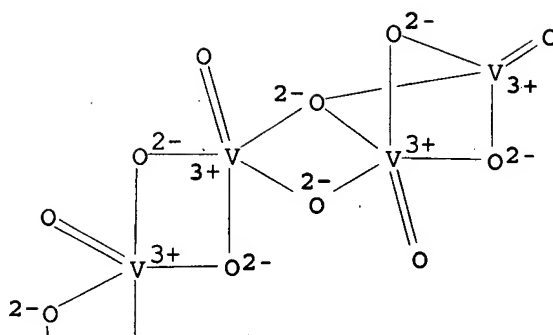
PAGE 2-A

● 7 K⁺

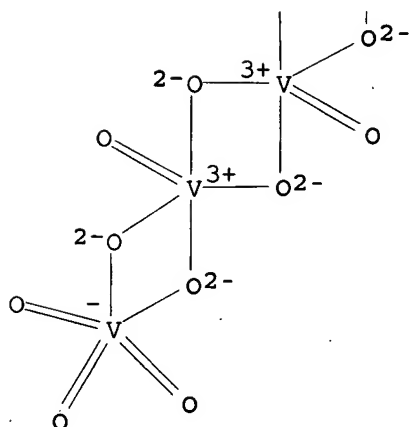
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CN Vanadate (V70217-), octasodium, stereoisomer (9CI) (CA INDEX NAME)

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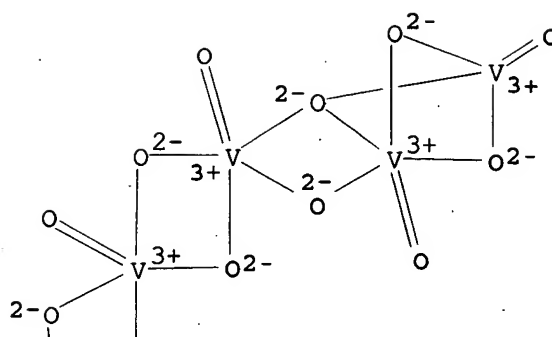


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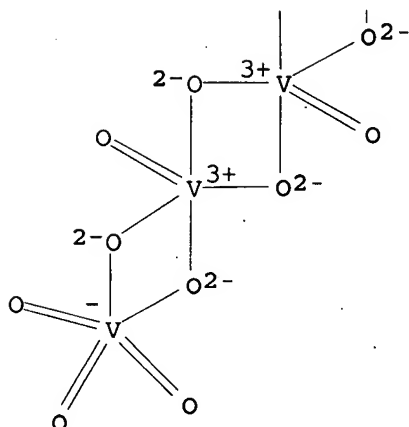
● 8 Na⁺

RN 300715-13-3 HCAPLUS
 CN Vanadate (V70217-), octapotassium, stereoisomer (9CI) (CA INDEX NAME)

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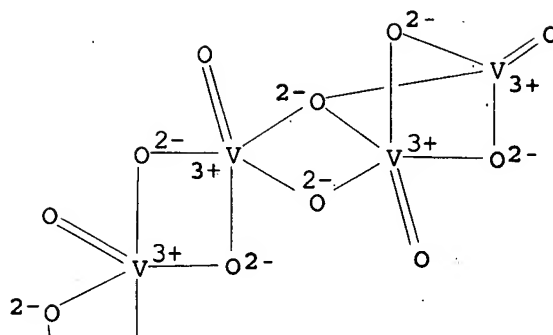
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● 8 K⁺

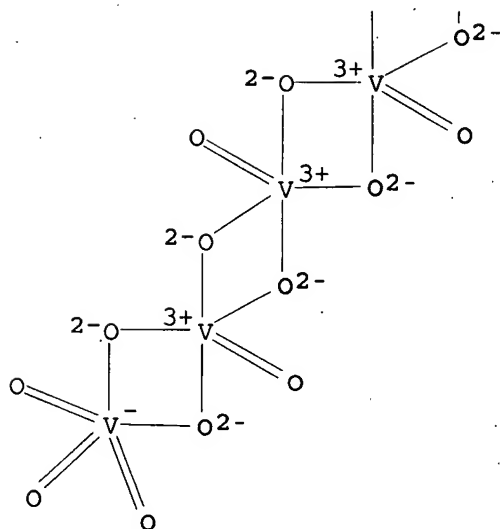
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CN Vanadate (V80248-), nonasodium, stereoisomer (9CI) (CA INDEX NAME)

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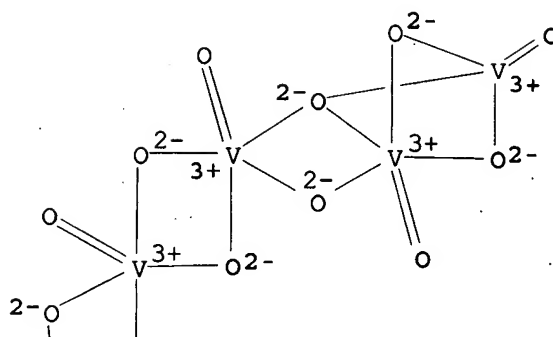
● 9 Na⁺

RN 300715-27-9 HCAPLUS

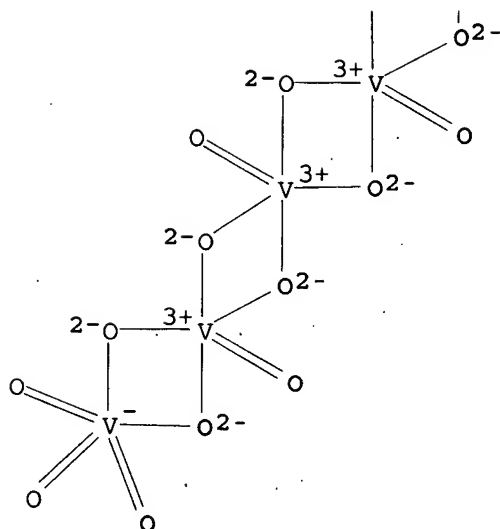
USHA SHRESTHA EIC 1700 REM 4B31

CN Vanadate (V80248-), nonapotassium, stereoisomer (9CI) (CA INDEX NAME)

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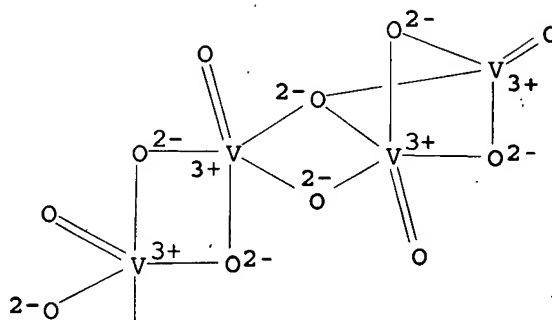


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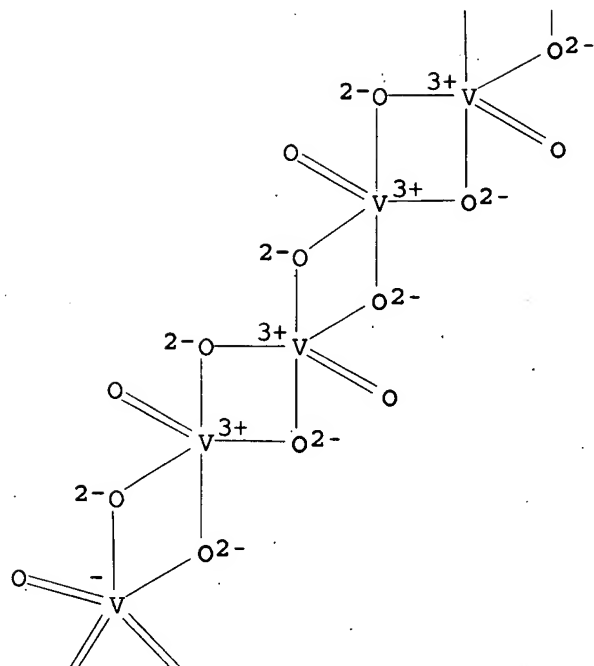
● 9 K⁺

RN 300715-29-1 HCAPLUS
CN Vanadate (V90279-), decasodium, stereoisomer (9CI) (CA INDEX NAME)

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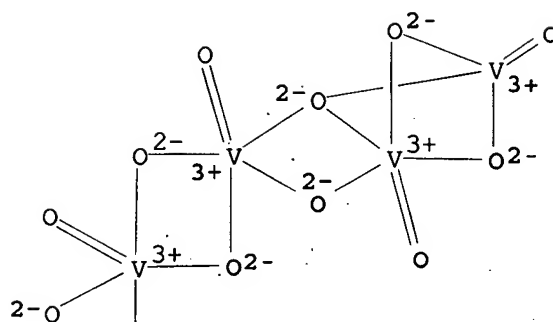
PAGE 3-A

●10 Na⁺

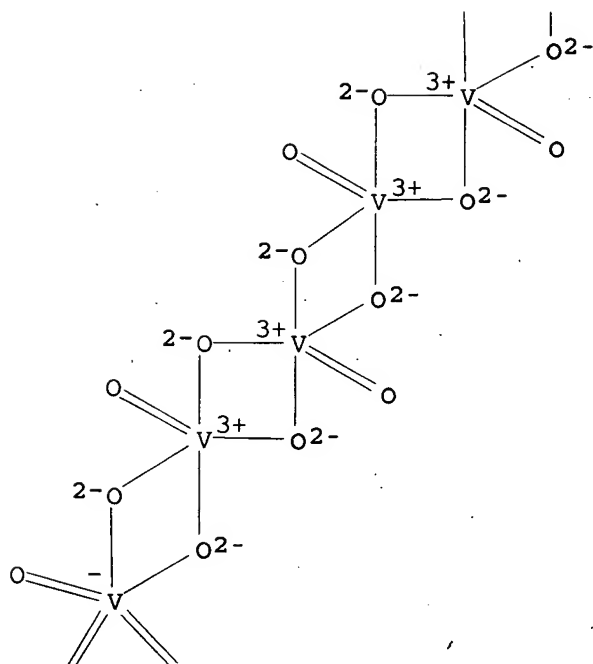
RN 300715-30-4 HCAPLUS

CN Vanadate (V90279-), decapotassium, stereoisomer (9CI) (CA INDEX NAME)

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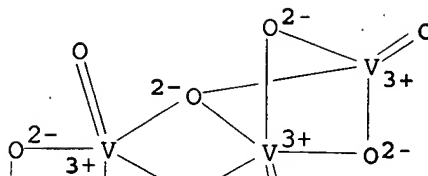


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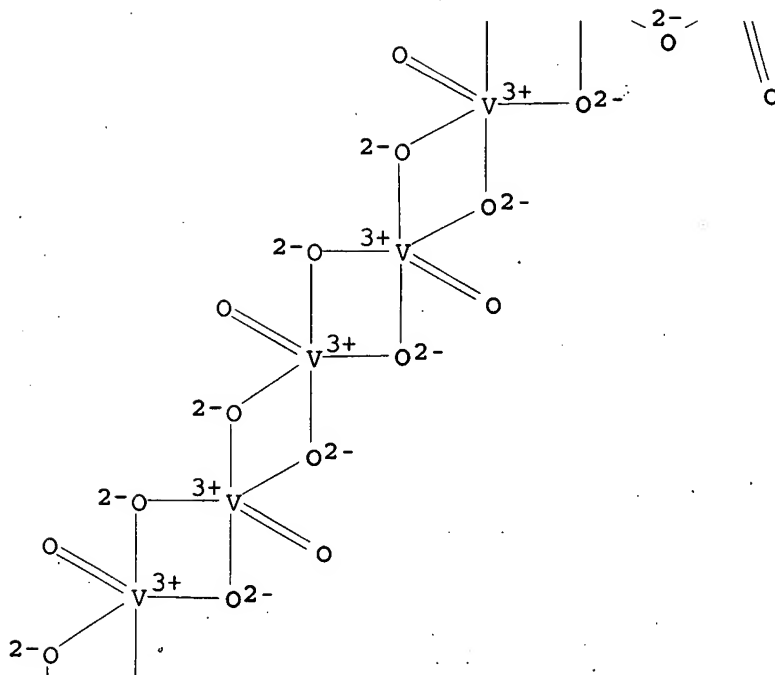
●10 K⁺

RN 300715-31-5 HCAPLUS
CN Vanadate (V1003010-), undecasodium, stereoisomer (9CI) (CA INDEX NAME)

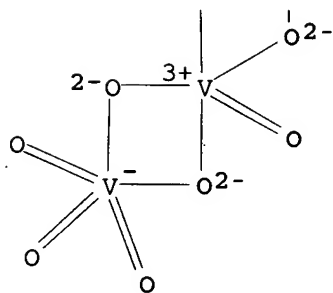
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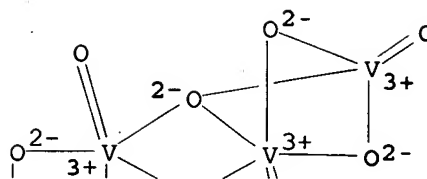


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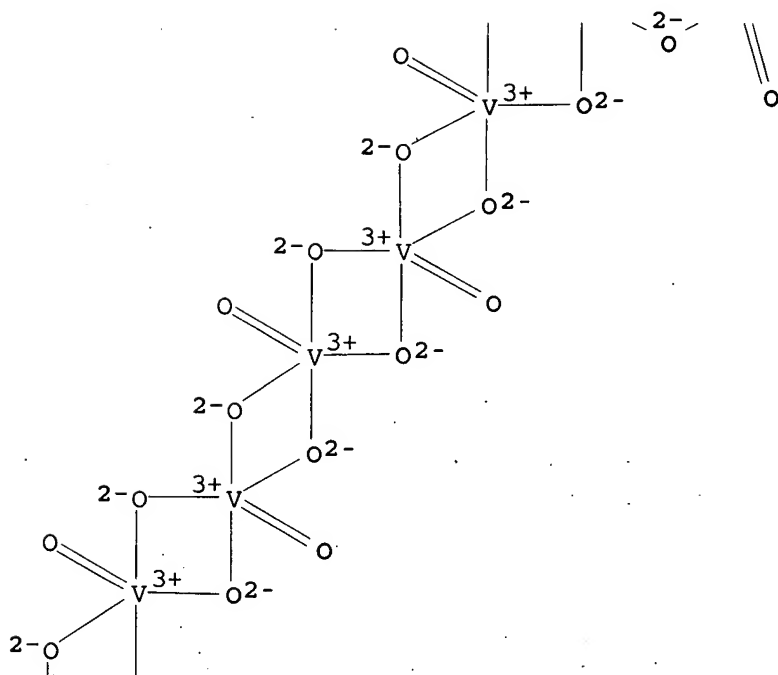
●11 Na⁺

RN 300715-32-6 HCAPLUS
 CN Vanadate (V1003010-), undecapotassium, stereoisomer (9CI) (CA INDEX NAME)

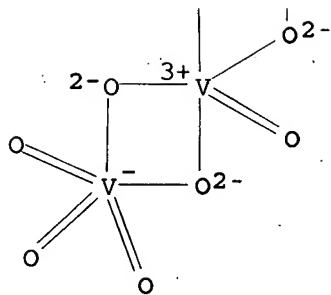
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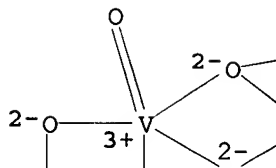
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●11 K⁺

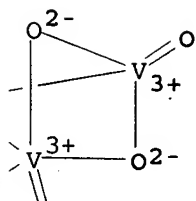
RN 300715-33-7 HCAPLUS

CN Vanadate (V1103311-), dodecapotassium, stereoisomer (9CI) (CA INDEX NAME)

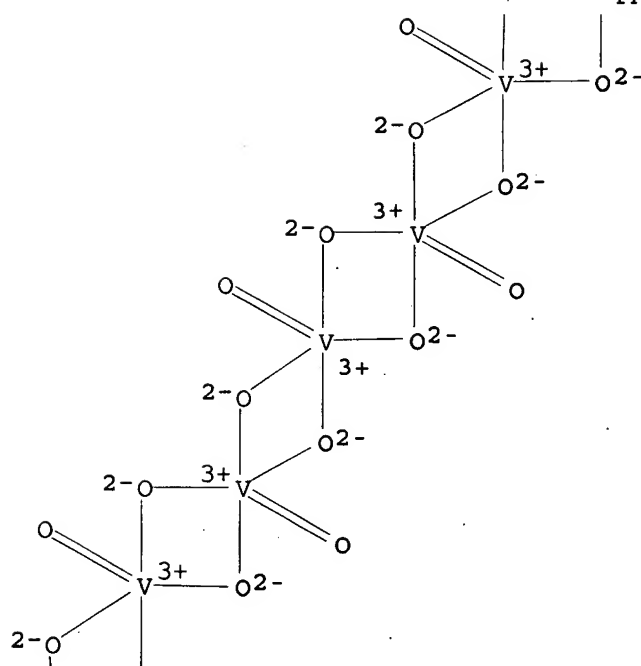
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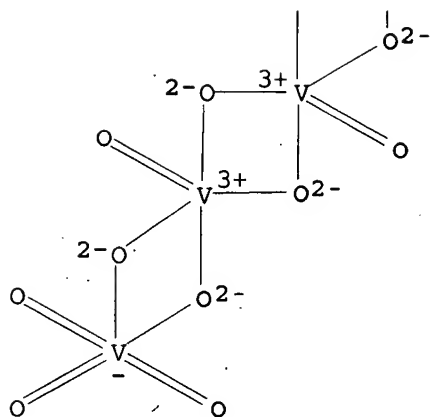


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PAGE 3-A

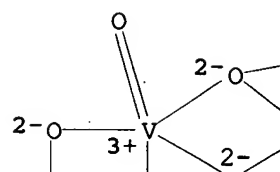
● 12 K⁺

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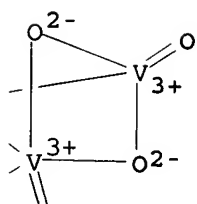


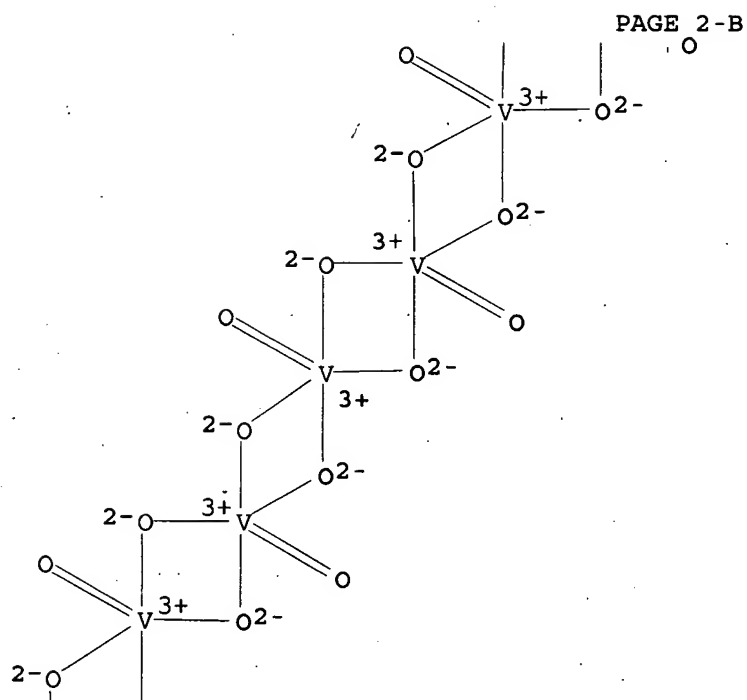
RN 300715-34-8 HCAPLUS
CN Vanadate (V1103311-), dodecasodium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-B



PAGE 1-C



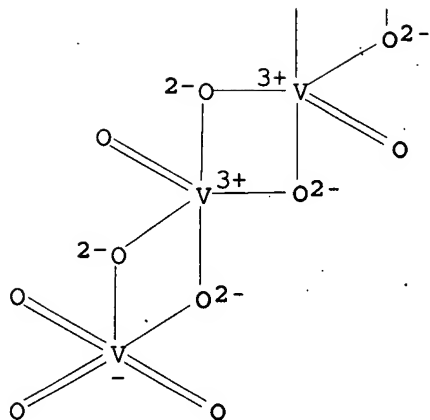


PAGE 2-C

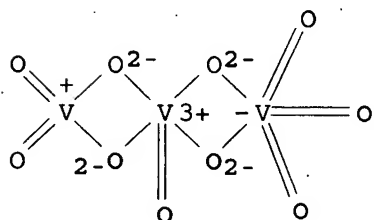
PAGE 3-A

●12 Na⁺

PAGE 3-B

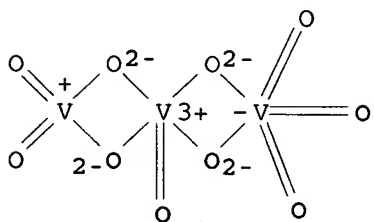


RN 300715-37-1 HCAPLUS
 CN Vanadate (V3O105-), hexasodium, stereoisomer (9CI) (CA INDEX NAME)



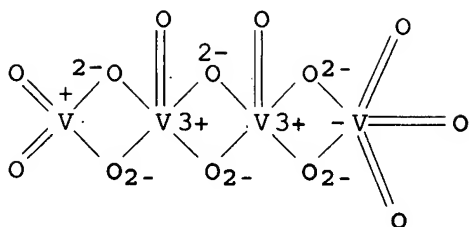
●6 Na⁺

RN 300715-38-2 HCAPLUS
 CN Vanadate (V3O105-), hexapotassium, stereoisomer (9CI) (CA INDEX NAME)



●6 K⁺

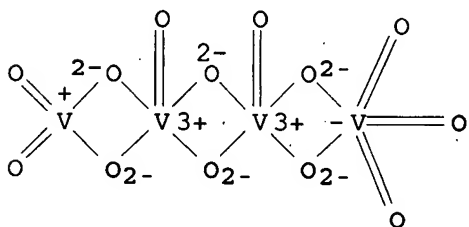
RN 300715-40-6 HCAPLUS
 CN Vanadate (V4O136-), heptasodium, stereoisomer (9CI) (CA INDEX NAME)



●7 Na⁺

RN 300765-39-3 HCAPLUS

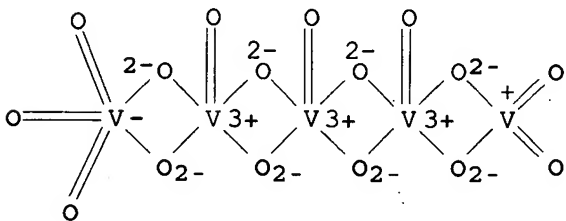
CN Vanadate (V40136-), heptapotassium, stereoisomer (9CI) (CA INDEX NAME)



●7 K⁺

RN 300765-40-6 HCAPLUS

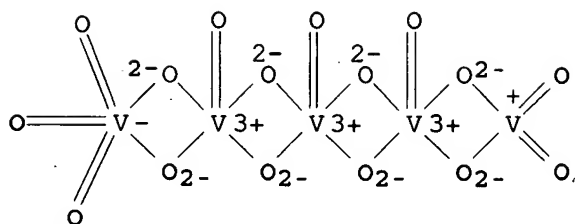
CN Vanadate (V50167-), octasodium, stereoisomer (9CI) (CA INDEX NAME)



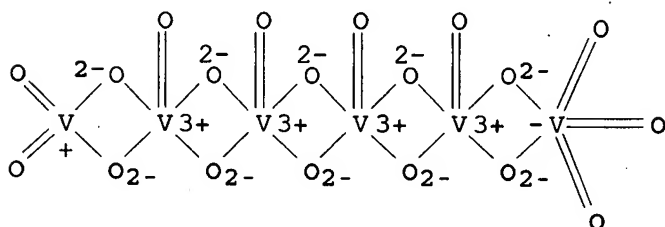
●8 Na⁺

RN 300765-41-7 HCAPLUS

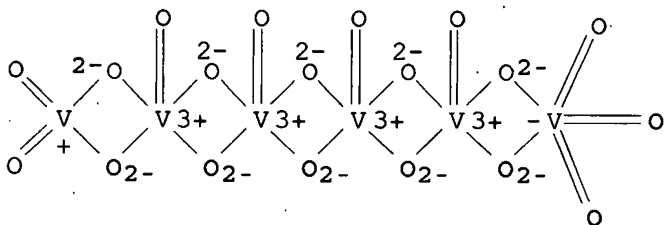
CN Vanadate (V50167-), octapotassium, stereoisomer (9CI) (CA INDEX NAME)

●8 K⁺

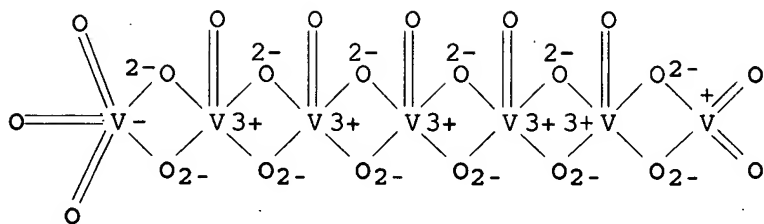
RN 300765-42-8 HCAPLUS
 CN Vanadate (V60198-), nonasodium, stereoisomer (9CI) (CA INDEX NAME)

●9 Na⁺

RN 300765-43-9 HCAPLUS
 CN Vanadate (V60198-), nonapotassium, stereoisomer (9CI) (CA INDEX NAME)

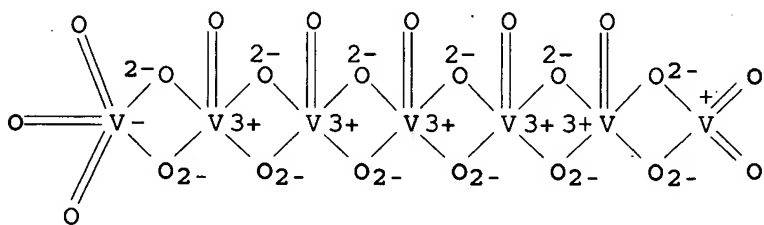
●9 K⁺

RN 300765-44-0 HCAPLUS
 CN Vanadate (V70229-), decasodium, stereoisomer (9CI) (CA INDEX NAME)



●10 Na⁺

RN 300765-45-1 HCAPLUS
 CN Vanadate (V70229-), decapotassium, stereoisomer (9CI) (CA INDEX NAME)



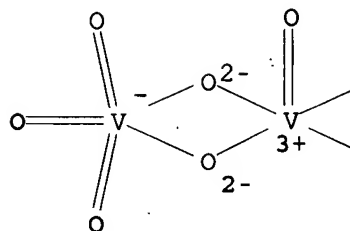
●10 K⁺

RN 300765-46-2 HCAPLUS
 CN Vanadate (V802510-), undecasodium, stereoisomer (9CI) (CA INDEX NAME)

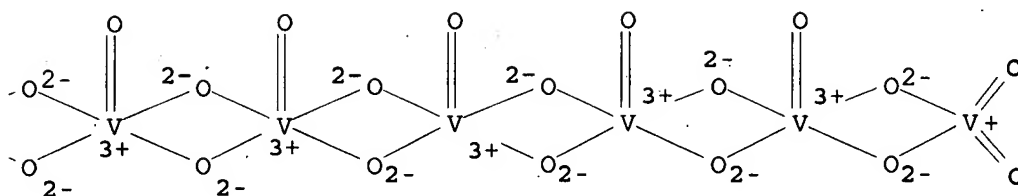
PAGE 1-A

●11 Na⁺

PAGE 1-B



PAGE 1-C

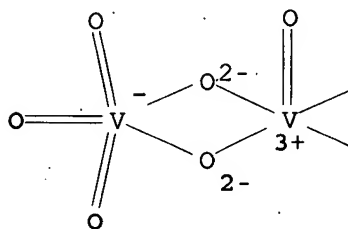


RN 300765-47-3 HCAPLUS
 CN Vanadate (V8O2510-), undecapotassium, stereoisomer (9CI) (CA INDEX NAME)

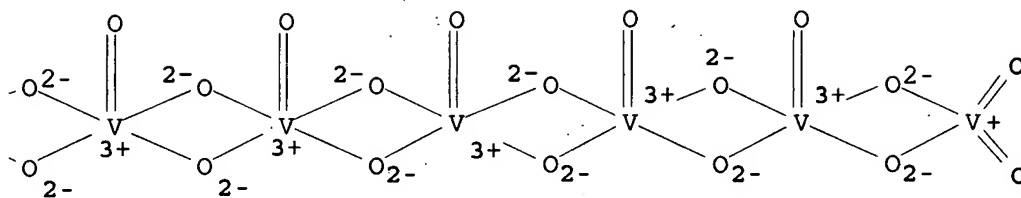
PAGE 1-A

● 11 K⁺

PAGE 1-B

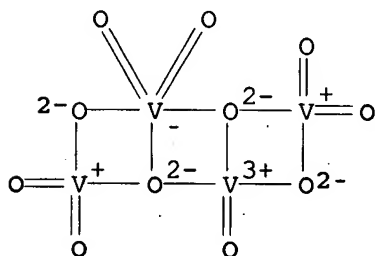


PAGE 1-C



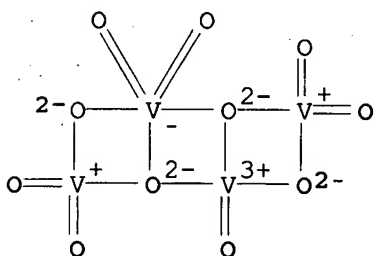
RN 300765-48-4 HCAPLUS

CN Vanadate (V40114-), pentasodium, stereoisomer (9CI) (CA INDEX NAME)

● 5 Na⁺

RN 300765-49-5 HCAPLUS

CN Vanadate (V40114-), pentapotassium, stereoisomer (9CI) (CA INDEX NAME)

● 5 K⁺

CC 78-9 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 73

IT 7803-55-6 12200-86-1 12200-88-3 12208-00-3 13718-26-8
 13769-43-2 15060-59-0, Lithium vanadium oxide (LiVO₃) 125717-05-7
 131906-46-2 131906-47-3 131906-48-4 199607-60-8 300685-23-8
 300685-25-0 300685-27-2 300685-29-4 300685-31-8

300685-33-0 300685-35-2 300685-37-4 300685-39-6 300685-41-0
300685-43-2 300685-45-4 300685-47-6 300685-49-8
300685-51-2 300685-53-4 300685-55-6 300685-57-8 300685-59-0
300685-61-4 300685-63-6 300685-65-8 300685-66-9 300685-67-0
300685-69-2 300685-71-6 300685-74-9 300685-76-1 300685-78-3
300685-80-7 300685-82-9 300685-84-1 300685-86-3 300685-90-9
300685-92-1 300685-94-3 300686-11-7 300686-15-1 300686-19-5
300686-21-9 300686-23-1 300686-36-6 300686-40-2 300686-44-6
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300765-57-5

(unknown isopolyoxovanadate species detected by electrospray mass spectrometry)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L27 ANSWER 6 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:19995 HCAPLUS

DOCUMENT NUMBER: 132:245306

TITLE: Polyoxometalates from heteropoly "brown"
precursors. A new structural class of mixed
valence heteropolytungstates,
[(XO₄)WIV₃WVI₁₇O₆₂Hx]_n-

AUTHOR(S): Dickman, Michael H.; Ozeki, Tomoji; Evans, Howard
T., Jr.; Rong, Chaoying; Jameson, Geoffrey B.;
Pope, Michael T.

CORPORATE SOURCE: Department of Chemistry, Georgetown University,
Washington, DC, 20057-1227, USA

SOURCE: Dalton (2000), (2), 149-154
CODEN: DALTFG; ISSN: 1470-479X

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 10 Jan 2000

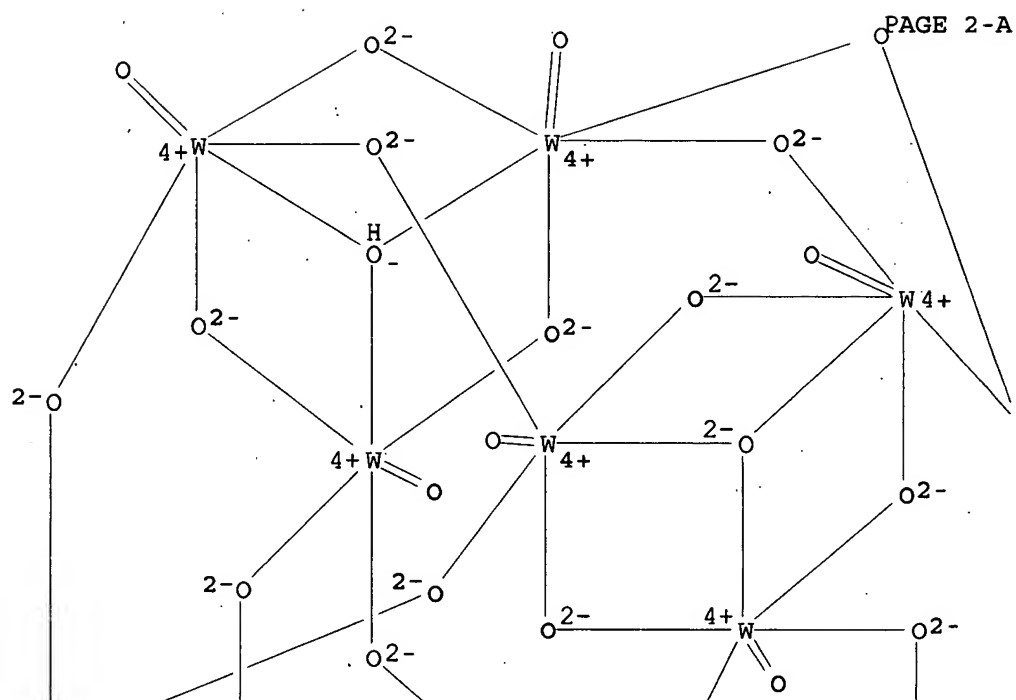
AB Reduction of the α -Keggin anion $[X_n+O_4W_{12}O_{36}][8-n]^-$ ($X = H_{22}^+, B_{3}^+, Si_{4}^+$) by six electrons results in the known W brown species $[X_n+O_4(H_2O)_3W_{12}O_{33}][8-n]^-$ in which three W atoms were reduced from WVI to WIV, forming a metal-metal bonded triad. The WIV atoms have terminal H_2O coordinated in place of terminal oxo groups. Addnl. tungstate can condense onto these H_2O mols. in aqueous solution between pH = 4 and 6.5 to form the species reported here, $[(XO_4)W_{12}O_{33}W_{12}O_{33}H_6]^{y-}$. The B derivative ($X = B_{3}^+$) is more stable than the metatungstate ($X = H_{22}^+$), both of which were characterized by elemental anal., 183W NMR and x-ray crystal structure anal. Eight addnl. tungstate groups condense as a partial Keggin structure containing two triads and one dyad which is rotated 60° relative to a hypothetical α -isomer.

IT 261764-89-0P
(for preparation of mixed valence isopolytungstate)

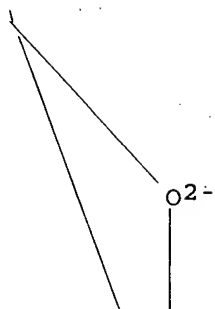
RN 261764-89-0 HCAPLUS

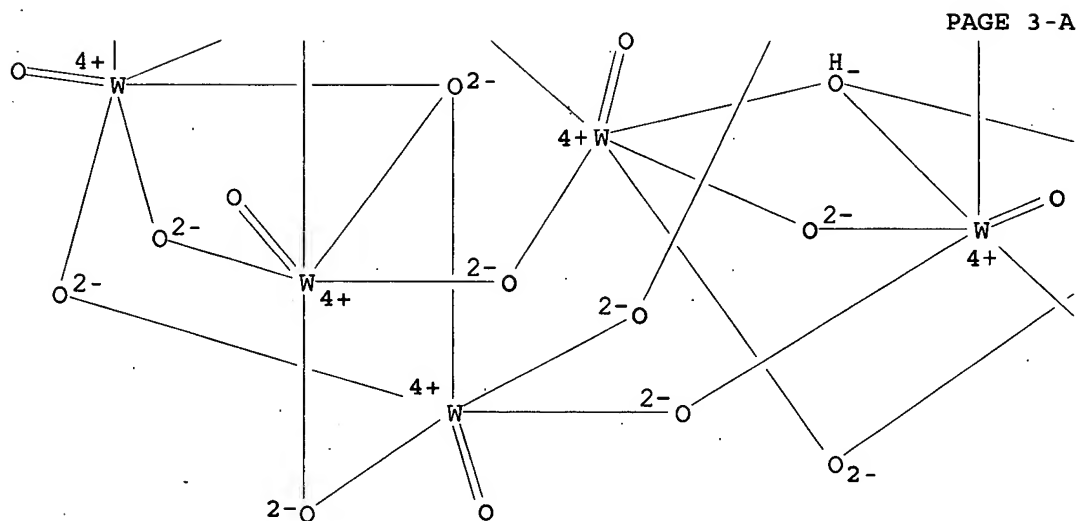
CN Tungstate ($W(OH)_2O_{38}I_4^-$), hexasodium octahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



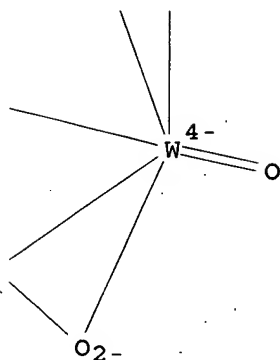
PAGE 2-B





● 8 H⁺

PAGE 3-B



● 6 Na⁺

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 11120-01-7P, Sodium tungsten oxide 12207-61-3P, Tungstate
(W12(OH)2O386-) 13472-45-2P 261764-89-0P

(for preparation of mixed valence isopolytungstate)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L27 ANSWER 7 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:12292 HCAPLUS

DOCUMENT NUMBER: 132:160378

TITLE: Framework materials containing polyoxovanadates as
building units: synthesis and characterization of
(N2H5)2[M3(H2O)12V18O42(EO4)]·24H2O (M =
Mg, Ca) and Li6[Mn3(H2O)12V18O42(EO4)]·24H2

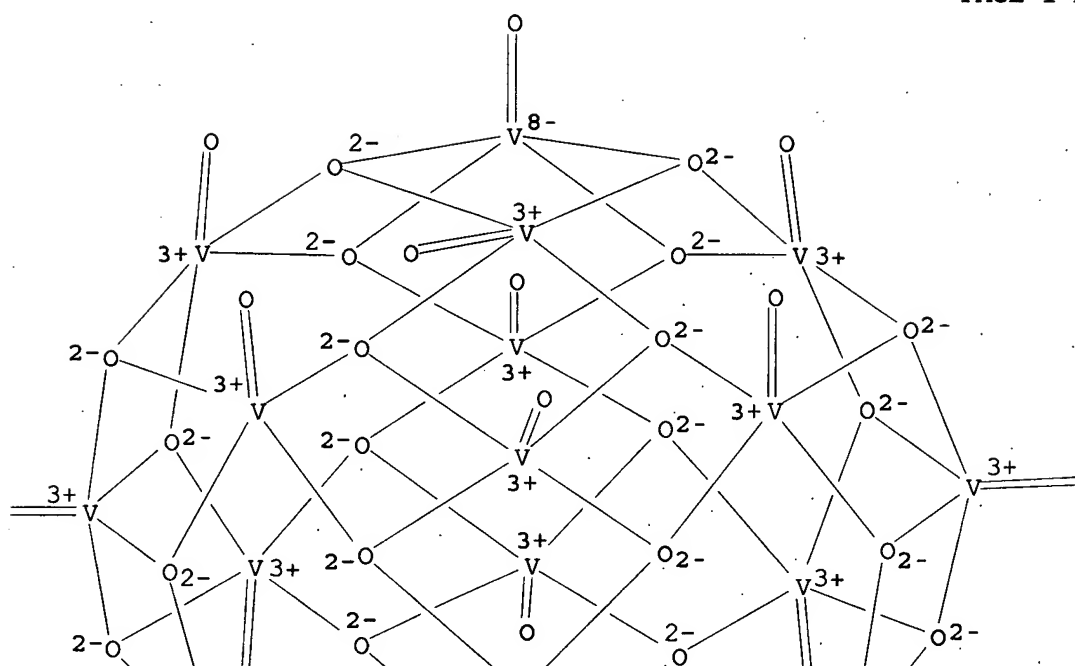
USHA SHRESTHA EIC 1700 REM 4B31

O (E = V, S)
 AUTHOR(S): Khan, M. Ishaque; Yohannes, Elizabeth; Doedens, Robert J.; Tabussum, Saadia; Cevik, Sabri; Manno, Larry; Powell, Douglas
 CORPORATE SOURCE: Department of Biological, Chemical, and Physical Sciences, Illinois Institute of Technology, Chicago, IL, 60616, USA
 SOURCE: Crystal Engineering (1999), 2(2/3), 171-179
 CODEN: CRYEF8; ISSN: 1463-0184
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 ED Entered STN: 06 Jan 2000
 AB The reaction of an aqueous solution of lithium vanadate with hydrazinium sulfate results in a dark-colored solution that reacts with magnesium sulfate heptahydrate, calcium sulfate dihydrate, and manganese(II) chloride tetrahydrate to yield single crystals of $(N_2H_5)_2[M_3(H_2O)_{12}V_{18}O_{42}(EO_4)] \cdot 24H_2O$ (M = Mg, Ca) and $Li_6[Mn_3(H_2O)_{12}V_{18}O_{42}(EO_4)] \cdot 24H_2O$ (E = V, S), resp. The crystal structures of the new solids consist of interpenetrating three-dimensional networks of $\{V_{18}O_{42}(EO_4)\}$ clusters interlinked via bridging $\{M(H_2O)_4\}$ (M = Mg, Ca, Mn) groups. The voids in these structures are occupied by lattice water and ion exchangeable cations.
 IT 257957-01-0DP, solid solution with sulfate-encapsulated analog
 257957-05-4DP, solid solution with sulfate-encapsulated analog (preparation and crystal and mol. structure)
 RN 257957-01-0 HCAPLUS
 CN Magnesium(2+), tetraqua-, (T-4)-, hydrazinium(1+) tetracosam-3-oxooctadeca-oxooctadecavanadate(5-) (T-4)-tetraoxovanadate(3-) (3:2:1:1), tetracosahydrate (9CI) (CA INDEX NAME)
 CM 1
 CRN 257957-00-9
 CMF H8 Mg O4 . 2/3 H5 N2 . 1/3 O42 V18 . 1/3 O4 V
 CM 2
 CRN 257956-99-3
 CMF O42 V18
 CCI CCS

PAGE 1-A



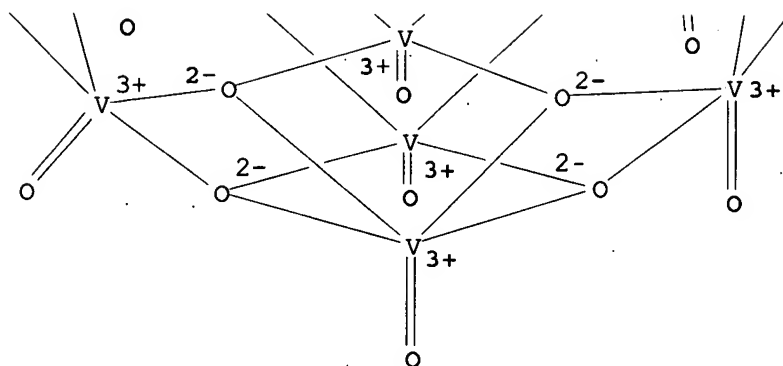
PAGE 1-B



PAGE 1-C

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PAGE 2-B

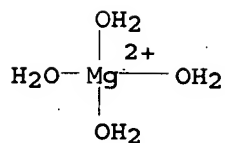


CM 3

CRN 50972-66-2

CMF H8 Mg O4

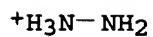
CCI CCS



CM 4

CRN 18500-32-8

CMF H5 N2

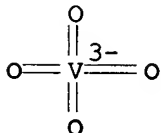


CM 5

CRN 14333-18-7

CMF 04 V

CCI CCS



RN 257957-05-4 HCAPLUS

CN Manganese(2+), tetraaqua-, (T-4)-, hydrazinium(1+)
 tetracosam-μ3-oxooctadeca-oxooctadecavanadate(5-)
 (T-4)-tetraoxovanadate(3-) (3:2:1:1); tetracosahydrate (9CI) (CA
 INDEX NAME)

CM 1

CRN 257957-04-3

CMF H8 Mn O4 . 2/3 H5 N2 . 1/3 O42 V18 . 1/3 O4 V

CM 2

CRN 257956-99-3

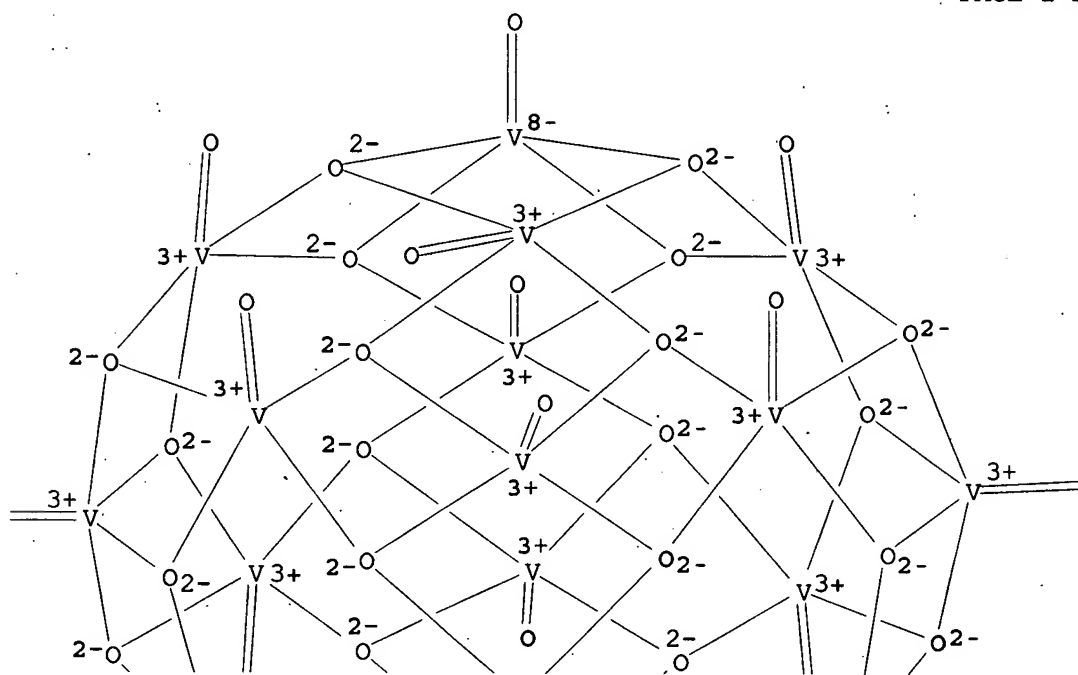
CMF 042 V18

CCI CCS

PAGE 1-A



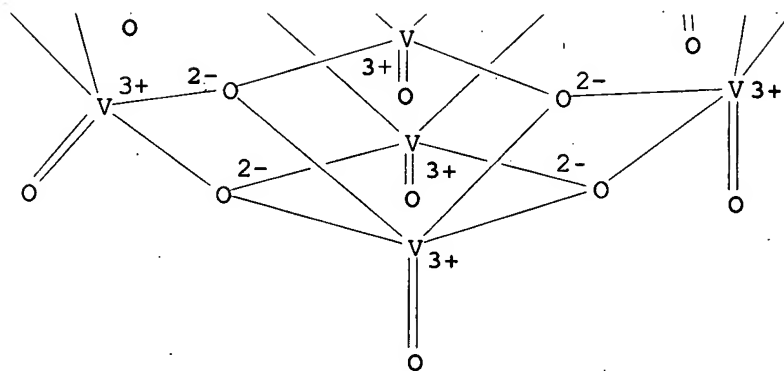
PAGE 1-B



PAGE 1-C

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PAGE 2-B

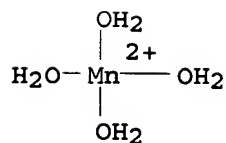


CM 3

CRN 220177-49-1

CMF H8 Mn O4

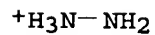
CCI CCS



CM 4

CRN 18500-32-8

CMF H5 N2

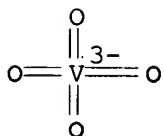


CM 5

CRN 14333-18-7

CMF O4 V

CCI CCS



IT 257957-03-2DP, solid solution with sulfate-encapsulated analog
(preparation and x-ray diffraction)

RN 257957-03-2 HCAPLUS

CN Calcium(2+), tetraaqua-, (T-4)-, hydrazinium(1+) tetracosa- μ 3-
oxooctadecaooctadecavanadate(5-) (T-4)-tetraoxovanadate(3-)
(3:2:1:1), tetracosahydrate (9CI) (CA INDEX NAME)

CM 1

CRN 257957-02-1

CMF Ca H8 O4 . 2/3 H5 N2 . 1/3 O42 V18 . 1/3 O4 V

CM 2

CRN 257956-99-3

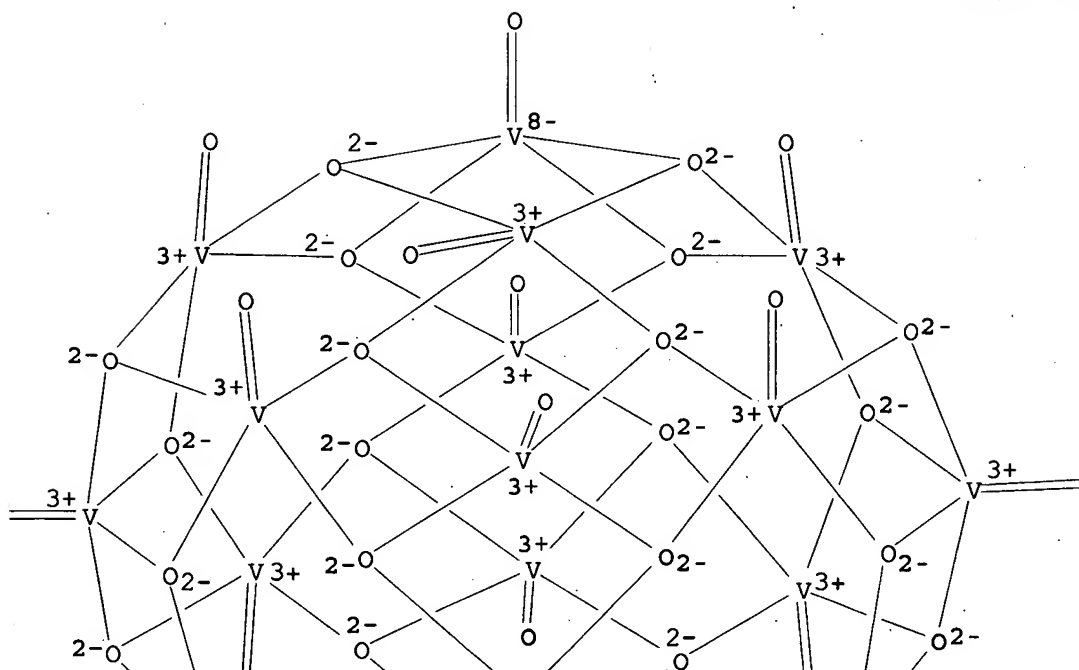
CMF O42 V18

CCI CCS

PAGE 1-A

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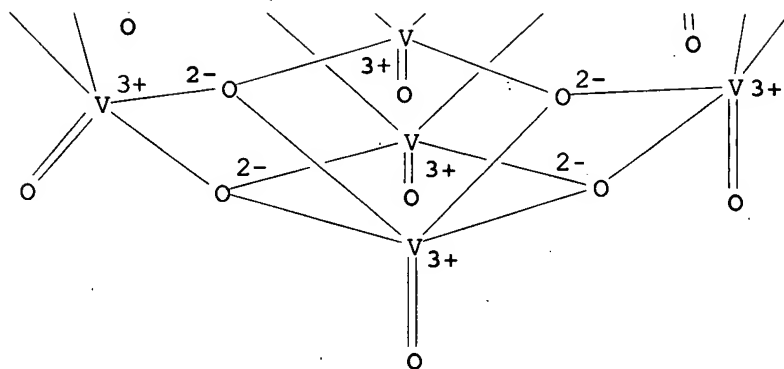
PAGE 1-B



PAGE 1-C

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PAGE 2-B

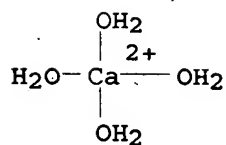


CM 3

CRN 81407-20-7

CMF Ca H8 O4

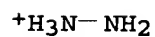
CCI CCS



CM 4

CRN 18500-32-8

CMF H5 N2

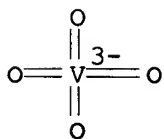


CM 5

CRN 14333-18-7

CMF O4 V

CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT Crystal structure

Molecular structure

(of polyoxovanadate vanadate/sulfate-encapsulated clusters interlinked into interpenetrating three-dimensional networks by magnesium and manganese tetraaqua complex cations)

- IT Cluster compounds
(oxygen-vanadium; preparation and crystal and mol. structure of polyoxovanadate vanadate/sulfate-encapsulated clusters interlinked into interpenetrating three-dimensional networks by magnesium, calcium and manganese tetraaqua complex cations)
- IT 1310-65-2, Lithium hydroxide (LiOH) 1314-62-1, Vanadium oxide (V2O5), reactions 5341-61-7, Hydrazinium dichloride 7487-88-9, Magnesium sulfate, reactions 7773-01-5, Manganese(II) chloride 7778-18-9, Calcium sulfate 10034-93-2, Hydrazinium sulfate (for preparation of polyoxovanadate vanadate/sulfate-encapsulated clusters interlinked into interpenetrating three-dimensional networks by divalent metal tetraaqua complex cations)
- IT 257957-01-0DP, solid solution with sulfate-encapsulated analog
257957-05-4DP, solid solution with sulfate-encapsulated analog
257957-08-7DP, solid solution with vanadate-encapsulated analog
257957-12-3DP, solid solution with vanadate-encapsulated analog (preparation and crystal and mol. structure)
- IT 257957-03-2DP, solid solution with sulfate-encapsulated analog
257957-10-1DP, solid solution with vanadate-encapsulated analog (preparation and x-ray diffraction)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 8 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:676249 HCAPLUS

DOCUMENT NUMBER: 132:8466

TITLE: An inorganic tire-tread lattice: hydrothermal synthesis of the layered vanadate [N(CH3)4]5V18O46 with a supercell structure

AUTHOR(S): Koene, Bryan E.; Taylor, Nicholas J.; Nazar, Linda F.

CORPORATE SOURCE: Department of Chemistry, University of Waterloo, Waterloo, ON, N2L 3G1, Can.

SOURCE: Angewandte Chemie, International Edition (1999), 38(19), 2888-2891
CODEN: ACIEF5; ISSN: 1433-7851

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 24 Oct 1999

AB The polyoxovanadate (Me4N)5V18O46 is prepared by hydrothermal reaction of V2O5, V2O3, Me4NCl, and Me4NOH (pH adjusted to 5.0 with HNO3). Other products are layered vanadate (Me4N)V4O10 and the known cluster (Me4N)6V15O36.Cl.4H2O. A crystal structure study of (Me4N)5V18O46 reveals a tire-tread lattice self-assembled from two distinct [V9O23] building blocks, neither of which forms repeating lattices on its own. One building block is neutral and the other carries localized electrons and is neg. charged. Organic cations reside between the layers. Formation of this unusual lattice appears to be driven by thermodyn. factors that minimize strain in the mixed-alternating lattice.

IT 110550-46-4P
(hydrothermal preparation with other polyoxovanadates)

RN 110550-46-4 HCAPLUS

CN Methanaminium, N,N,N-trimethyl-, μ 6-chlorotri- μ -oxooctadeca-

μ^3 -oxopentadeca-oxopentadecavanadate(6-) (6:1), tetrahydrate (9CI)
(CA INDEX NAME)

CM 1

CRN 110550-45-3

CMF C4 H12 N . 1/6 Cl O36 V15

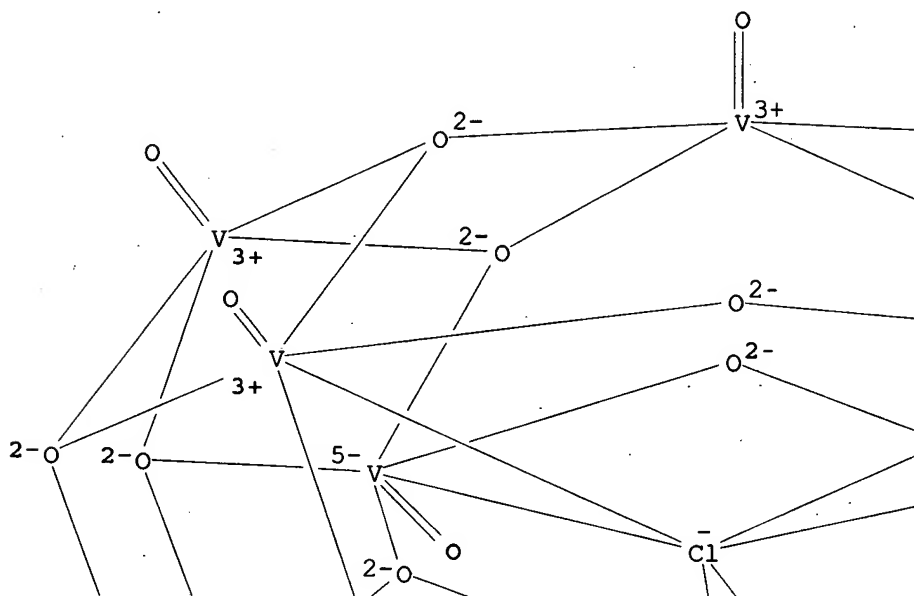
CM 2

CRN 441286-66-4

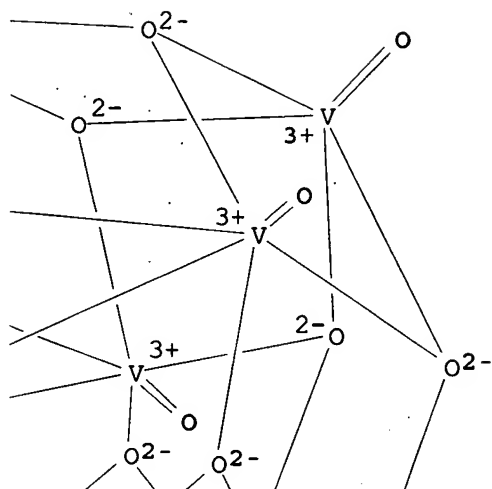
CMF Cl O36 V15

CCI CCS

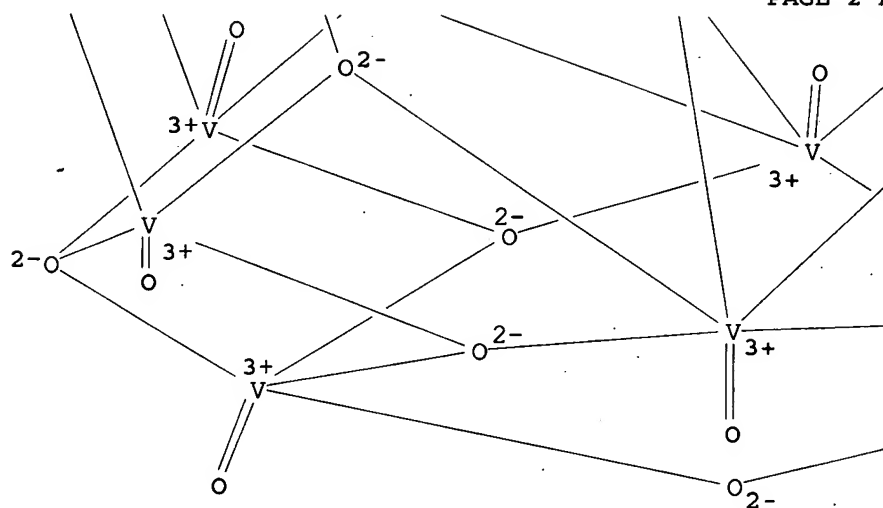
PAGE 1-A



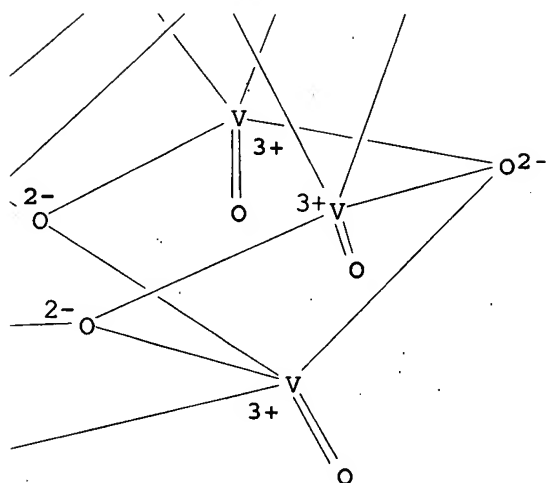
PAGE 1-B



PAGE 2-A

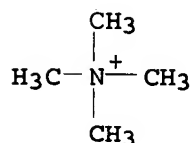


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CM 3

CRN 51-92-3
CMF C4 H12 N



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 110550-46-4P 180604-51-7P

(hydrothermal preparation with other polyoxovanadates)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L27 ANSWER 9 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:652504 HCAPLUS

DOCUMENT NUMBER: 131:359513

TITLE: Synthesis, Structure, and Magnetic Properties of
(n-Bu₄N)₂ [{Ni(MeOH)₂}{Mo(NO)₂(μ₃-OH)₂(μ-
OMe)₄{Mo₅O₁₃(OMe)₄(NO)₂}]₂, a New Type of
Polyoxometalate Incorporating a Rhomb-like Cluster

AUTHOR(S): Villanneau, Richard; Proust, Anna; Robert,

Francis; Veillet, Pierre; Gouzerh, Pierre

CORPORATE SOURCE: Laboratoire de Chimie Inorganique et Matériaux
Moléculaires CNRS ESA 7071, Université Pierre et
Marie Curie, Paris, 75252, Fr.SOURCE: Inorganic Chemistry (1999), 38(22),
4981-4985

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

USHA SHRESTHA EIC 1700 REM 4B31

LANGUAGE: English

ED Entered STN: 14 Oct 1999

AB The oxo-nitrosyl compound $(\text{Bu}_4\text{N})_2[\{\text{Na}(\text{MeOH})\}\text{Mo}_5\text{O}_{13}(\text{OMe})_4(\text{NO})] \cdot 3\text{MeOH}$ reacts with various $\text{Ni}(\text{II})$ salts in MeOH to give $(\text{Bu}_4\text{N})_2[\{\text{Ni}(\text{MeOH})_2\}_2\{\text{Mo}(\text{NO})\}_2(\mu_3\text{-OH})_2(\mu\text{-OMe})_4\{\text{Mo}_5\text{O}_{13}(\text{OMe})_4(\text{NO})\}_2]$, which was characterized by single-crystal x-ray diffraction anal. and magnetic susceptibility measurements. This reaction shows the dual behavior of the defect Lindqvist-type species $[\text{Mo}_5\text{O}_{13}(\text{OMe})_4(\text{NO})]^{3-}$, which can act both as a ligand and as a source of the $\{\text{Mo}(\text{NO})\}^{3+}$ unit. also, the reaction is reminiscent of the dissoln.-precipitation of oxide supports in the preparation of supported catalysts and provides a novel illustration of the potential of polyoxometalates for probing the reactivity of oxides. The new polyoxomolybdate is made of a central rhomb-like $\{\text{Ni}_2\text{Mo}_2\}$ cluster linked to two terminal $[\text{Mo}_5\text{O}_{13}(\text{OMe})_4(\text{NO})]^{3-}$ units, each terminal cluster being linked to a Mo center of the central unit through two oxo ligands. The two $\text{Ni}(\text{II})$ ions are coupled in a ferromagnetic way ($J = 13.1 \text{ cm}^{-1}$).

IT 250371-70-1P

(preparation, crystal structure and ferromagnetic exchange in)

RN 250371-70-1 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, bis[bis(methanol)nickelate]di- μ_3 -hydroxydodeca- μ -methoxytetranitrosyldodeca- μ -oxodi- μ_5 -oxododecaoxododecamolybdate(2-) (2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 250371-69-8

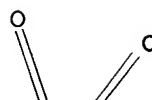
CMF C16 H54 Mo12 N4 Ni2 O48

CCI CCS

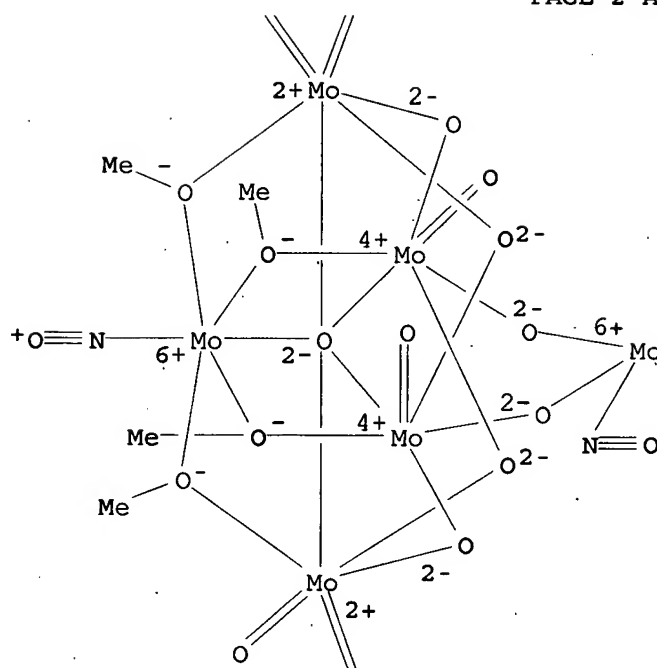
PAGE 1-A



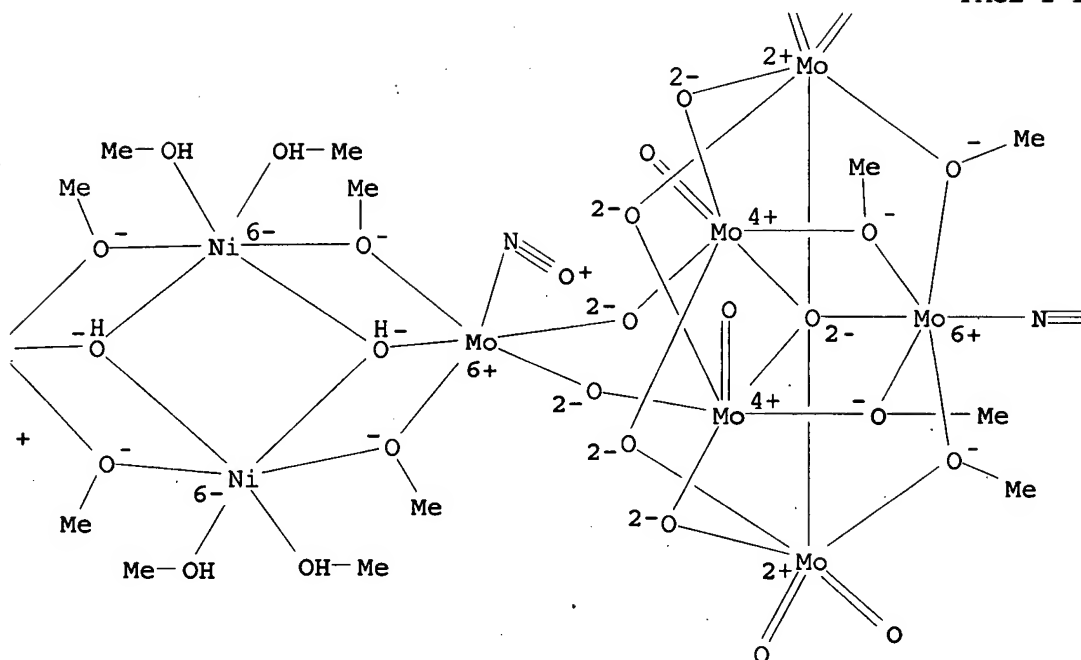
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PAGE 2-B



PAGE 2-C

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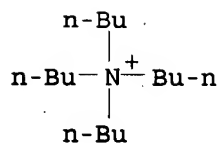
PAGE 3-A



CM 2

CRN 10549-76-5

CMF C16 H36 N



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75, 77

IT 250371-70-1P

(preparation, crystal structure and ferromagnetic exchange in)

REFERENCE COUNT: 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 10 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:390671 HCAPLUS

DOCUMENT NUMBER: 131:81056

TITLE: Crystal structure of pentakis(tetraethylammonium) octadecavanadate, [(C₂H₅)₄N]⁵⁺[V₁₈O₄₂(H₂O)]

AUTHOR(S): Shan, Y.; Huang, S. D.

CORPORATE SOURCE: Dep. Chemistry, Univ. Puerto Rico, San Juan, 00931, P. R.

SOURCE: Zeitschrift fuer Kristallographie - New Crystal Structures (1999), 214(3), 383-386

CODEN: ZKNSFT; ISSN: 1433-7266

PUBLISHER: R. Oldenbourg Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 24 Jun 1999

AB The title compound is monoclinic, space group P2₁/n, a 13.3994(7), b 23.098(1), c 26.379(1) Å, β 90.265(1)°, Z = 4, R = 0.076, R_w = 0.084 for 5576 observed reflections with I_o > 2σ(I_o). Atom coordinates are given. The crystal structure consists of the discrete [V₁₈O₄₂(H₂O)]⁵⁻ anions and [Et₄N]⁺ cations. The 18 square pyramids in the anion are connected to each other via the edges forming the spherical V₁₈O₄₂ shell.

IT 228705-58-6P

(preparation and crystal structure of hydrate anion-encapsulated)

RN 228705-58-6 HCAPLUS

CN Ethanaminium, N,N,N-triethyl-, tetracosam-μ₃-oxooctadeca-oxooctadecavanadate(5-) (5:1), monohydrate (9CI) (CA INDEX NAME)

CM 1

CRN 228705-57-5

CMF C8 H₂₀ N . 1/5 O₄₂ V₁₈

CM 2

CRN 257956-99-3

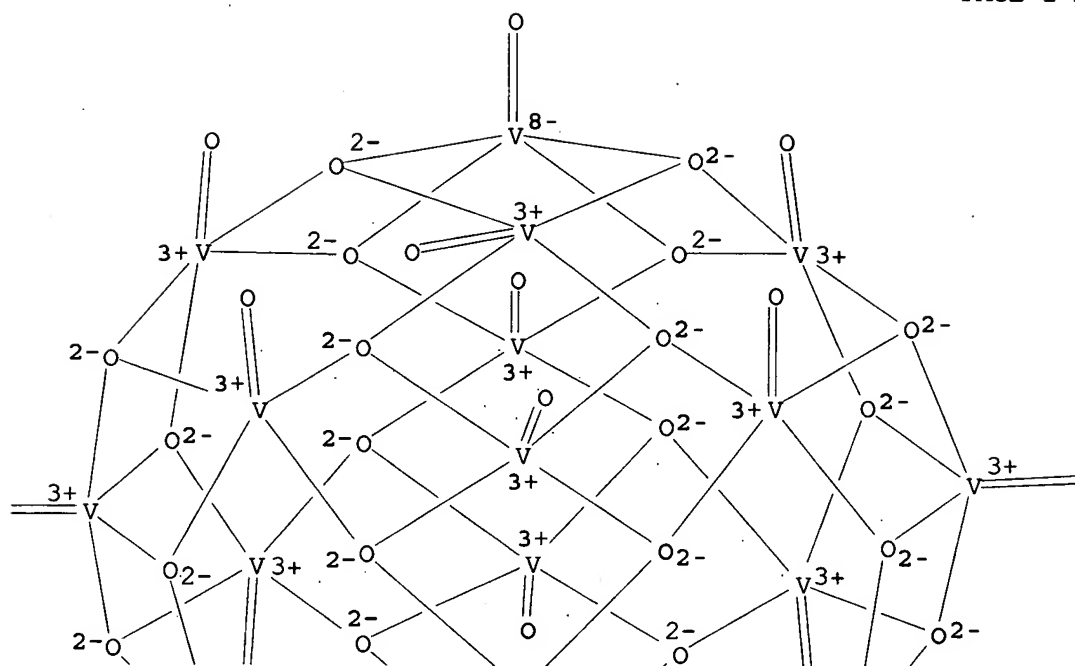
CMF O₄₂ V₁₈

CCI CCS

PAGE 1-A

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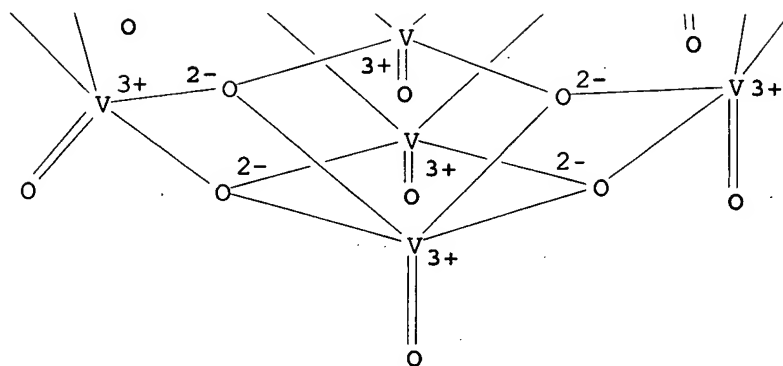
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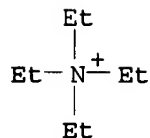
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CM 3

CRN 66-40-0
 CMF C8 H20 N



CC 75-8 (Crystallography and Liquid Crystals)

Section cross-reference(s): 78

IT 228705-58-6P

(preparation and crystal structure of hydrate anion-encapsulated)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
 RE FORMAT

USHA SHRESTHA EIC 1700 REM 4B31

L27 ANSWER 11 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:99261 HCAPLUS

DOCUMENT NUMBER: 130:217135

TITLE: Chemically controlled condensation of polyoxovanadates

AUTHOR(S): Livage, J.; Bouhedja, L.; Bonhomme, C.

CORPORATE SOURCE: Chimie de la Matiere Condensee, Universite Pierre et Marie Curie, Paris, 75252, Fr.

SOURCE: Journal of Sol-Gel Science and Technology (1998), 13(1/2/3), 65-70

CODEN: JSGTEC; ISSN: 0928-0707

PUBLISHER: Kluwer Academic Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 15 Feb 1999

AB A wide range of polyvanadates can be synthesized from aqueous solns. V oxide gels $V_2O_5 \cdot nH_2O$ are formed around the point of zero charge (pH \approx 2). They exhibit a ribbon-like structure. Weak interactions between these ribbons give mesophases in which V oxide gels or sols behave as nematic liquid crystals. Organic species can be easily intercalated between these oxide ribbons giving hybrid nanocomposites made of alternative layers of organic and inorg. components. Hybrid materials can also be formed at a higher pH in the presence of large organic ions such as $[NMe_4]^+$. They exhibit layered structures in which organic cations lie between polyoxovanadate planes. Such layered structures are not obtained in the presence of anions such as Cl^- or I^- . Cluster shell polyvanadates are then formed. They are made of neg. charged polyvanadate hollow spheres in which the neg. anion is encapsulated. In this case the organic cations behave as counterions for the formation of the hybrid crystalline network.

IT 110550-45-3P

(preparation by chemical controlled condensation of vanadium pentoxide hydrate gels in presence of tetramethylammonium cations or halides)

RN 110550-45-3 HCAPLUS

CN Methanaminium, N,N,N-trimethyl-, μ_6 -chlorotri- μ -oxooctadeca- μ_3 -oxopentadeca-oxopentadecavanadate(6-) (6:1) (CA INDEX NAME)

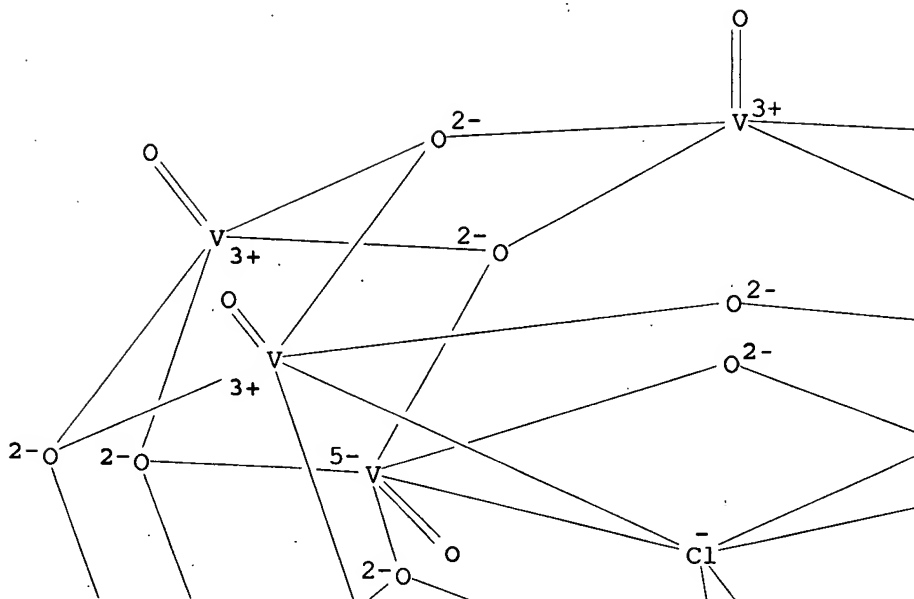
CM 1

CRN 441286-66-4

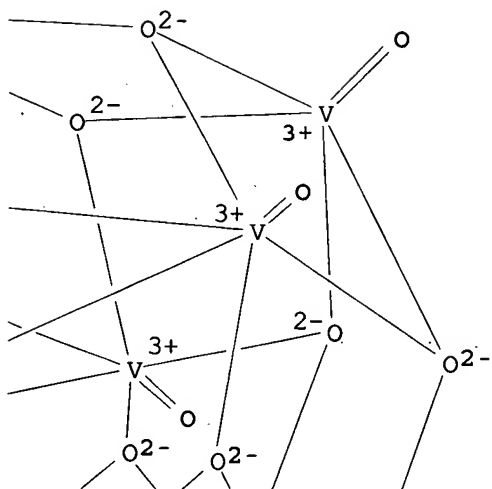
CMF Cl 036 V15

CCI CCS

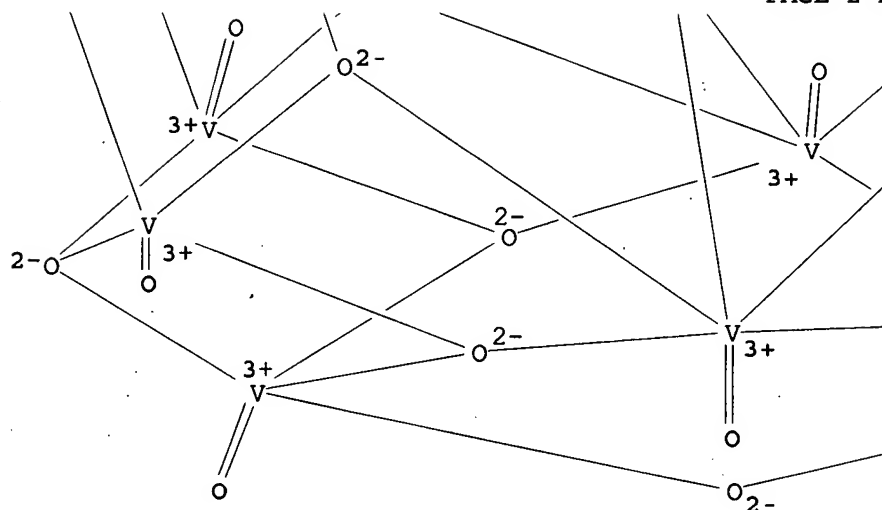
PAGE 1-A



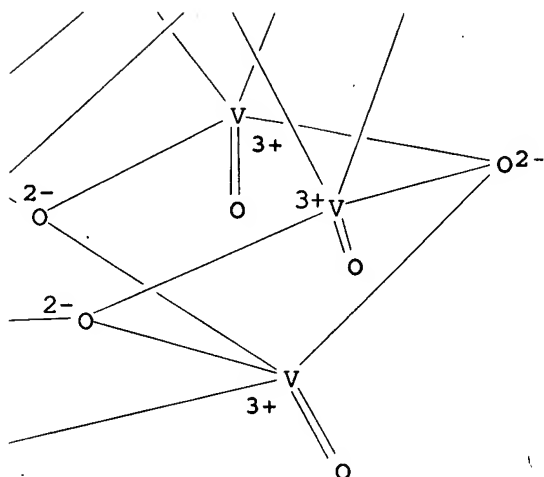
PAGE 1-B



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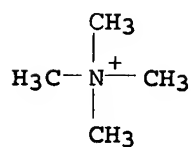


PAGE 2-B



CM 2

CRN 51-92-3
CMF C4 H12 N



CC 78-7 (Inorganic Chemicals and Reactions)
IT Anions

Cations

(effect on chemical controlled condensation of polyoxovanadates)

IT 7440-62-2DP, Vanadium, polyoxovanadates, preparation

110550-45-3P 220941-39-9P

(preparation by chemical controlled condensation of vanadium pentoxide hydrate gels in presence of tetramethylammonium cations or halides)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L27 ANSWER 12 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:721905 HCAPLUS

DOCUMENT NUMBER: 130:19872

TITLE: The inserting host-guest system in
[N(CH₃)₄]₈[(CH₃COO)V₂O₅]₄·25H₂OAUTHOR(S): Chirayil, Thomas; Zavald, Peter Y.; Whittingham,
M. StanleyCORPORATE SOURCE: Materials Res. Center, State Univ. New York
Binghamton, Binghamton, NY, 13902-6016, USASOURCE: Acta Crystallographica, Section C: Crystal
Structure Communications (1998),
C54(10), 1441-1444

CODEN: ACSCEE; ISSN: 0108-2701

PUBLISHER: Munksgaard International Publishers Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 16 Nov 1998

AB The title compound, octakis(tetramethylammonium) docosavanadate acetate
4.25-hydrate, was synthesized and found to crystallize in tetragonal
space group P4₂/n, with 14.4890(2), c 21.5432(3) Å; Z = 2, dc =
1.993; R = 0.052, Rw = 0.076 for 4991 reflections. Atomic
coordinates are given. Twenty-two V square pyramids form a
barrel-shaped cluster which hosts the acetate ion; this is the 1st
case where an organic mol. is hosted by a V oxide cluster. The clusters
are linked into a three-dimensional net by H bonds with H₂O mols.
Me₄N⁺ ions fill the space between the clusters.

IT 216000-88-3P

(preparation and crystal structure of)

RN 216000-88-3 HCAPLUS

CN Methanaminium, N,N,N-trimethyl-, acetate nona-μ-oxotricosa-μ₃-
oxodocosaoxodocosavanadate(7-), hydrate (32:4:4:17) (9CI) (CA INDEX
NAME)

CM 1

CRN 216000-87-2

CMF C4 H12 N . 1/8 C2 H3 O2 . 1/8 O54 V22

CM 2

CRN 216000-86-1

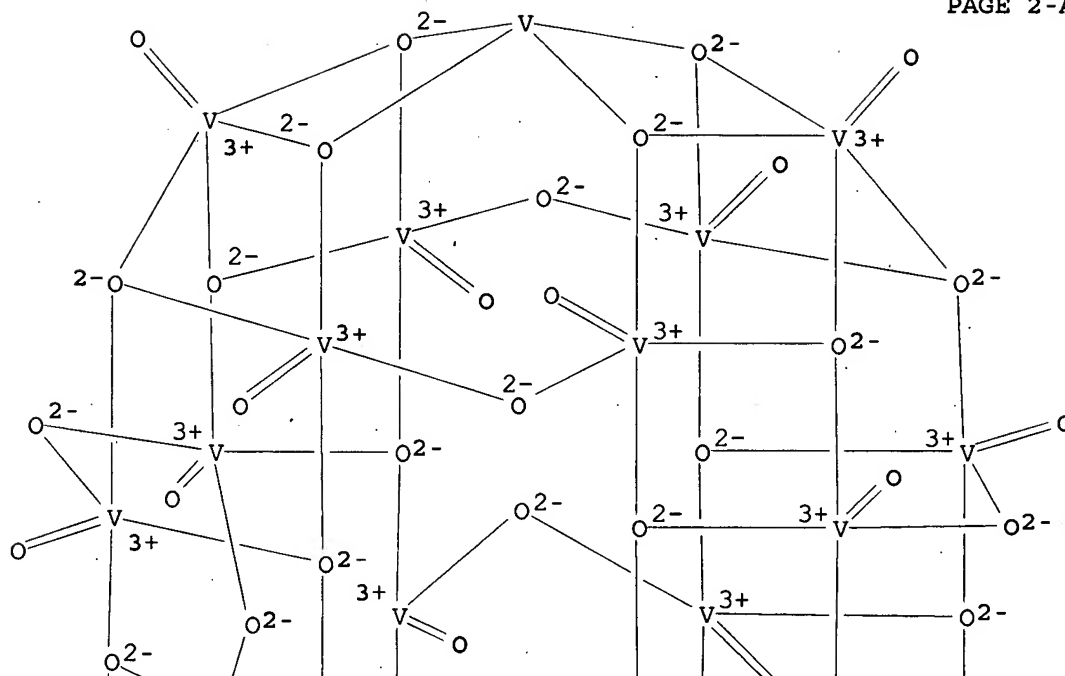
CMF O54 V22

CCI CCS

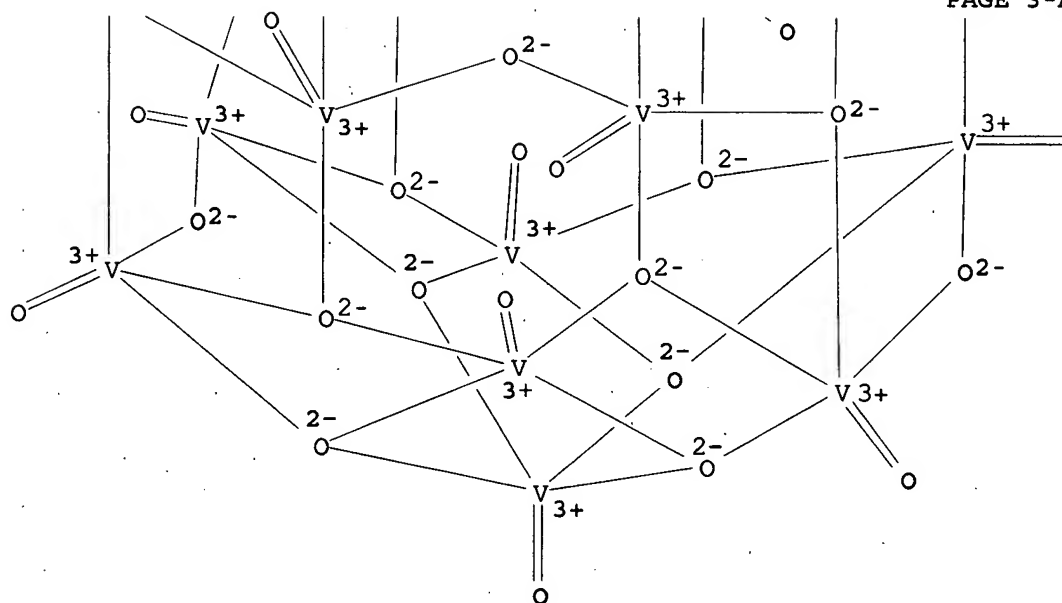
PAGE 1-A



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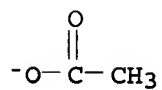


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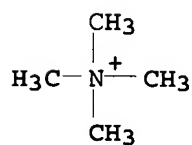
CM 3

CRN 71-50-1
CMF C2 H3 O2



CM 4

CRN 51-92-3
CMF C4 H12 N



CC 78-6 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 216000-88-3P

(preparation and crystal structure of)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 13 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:658881 HCAPLUS

DOCUMENT NUMBER: 127:302424

TITLE: Synthesis and structure of $\text{KIn(en)2SnTe4.1.5en}$ containing a mixed-metal one-dimensional chain

AUTHOR(S): Wang, Chwanchin; Haushalter, Robert C.

CORPORATE SOURCE: NEC Res. Inst., Princeton, NJ, 08540, USA

SOURCE: Chemical Communications (Cambridge) (1997), (18), 1719-1720

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 17 Oct 1997

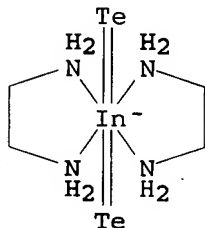
AB Reaction of K2Te , SnTe , In2Te3 , and Te with ethylenediamine for 3 days results in the preparation of $\text{KIn(en)2SnTe4.1.5en}$ (1). 1 Can also be synthesized in 3 wk from the alloy KInSnTe4 and ethylenediamine. The linkage of a coordination compound, cis-[In(en)2Te2] , and a Zintl anion, $[\text{SnTe4}]$, into a 1-dimensional chain by sharing Te atoms is observed for the 1st time in 1.

IT 196940-64-4P

(preparation and crystal structure)

RN 196940-64-4 HCAPLUS

CN Indate(1-), bis(1,2-ethanediamine- $\kappa\text{N},\kappa\text{N}'$)ditelluroxo-, potassium (9CI) (CA INDEX NAME)



● K^+

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

ST crystal structure indium ethylenediamine tellurostannate

polymer; indium ethylenediamine tellurostannate chain prep structure

IT 196940-64-4P

(preparation and crystal structure)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE

RE FORMAT

L27 ANSWER 14 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:619669 HCAPLUS

DOCUMENT NUMBER: 127:242362

TITLE: Spectroelectrochemical (UV-vis, IR, NMR, and EPR) Study of the Inorganometallic Complexes Ru(E)(E')(CO)₂(iPr-DAB) (E = Cl, E' = SnPh₃, PbPh₃; E = Me, SnPh₃, GePh₃, E' = SnPh₃; E = E' = PbPh₃; iPr-DAB = N,N'-Diisopropyl-1,4-diaza-1,3-butadiene)

AUTHOR(S): Aarnts, Maxim P.; Hartl, Frantisek; Peelen, Karin; Stufkens, Derk J.; Amatore, Christian; Verpeaux, Jean-Noel

CORPORATE SOURCE: Anorganisch Chemisch Laboratorium J. H. van't Hoff Research Instituut, Universiteit van Amsterdam, Amsterdam, 1018 WV, Neth.

SOURCE: Organometallics (1997), 16(21), 4686-4695

CODEN: ORGND7; ISSN: 0276-7333

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 29 Sep 1997

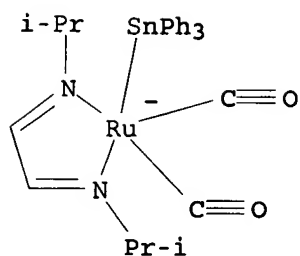
AB The reduction paths of two series of Ru complexes, Ru(Cl)(E')(CO)₂(iPr-DAB) (E' = SnPh₃, PbPh₃, iPr-DAB = N,N'-diisopropyl-1,4-diaza-1,3-butadiene) and Ru(E)(E')(CO)₂(iPr-DAB) (E = Me, GePh₃, SnPh₃, E' = SnPh₃; E = E' = PbPh₃), were studied by spectroelectrochem. techniques. Reduction of the Cl complexes is a two-electron ECE process which directly affords the closed-shell five-coordinate anions [Ru(E')(CO)₂(iPr-DAB)]⁻ via transient radicals [Ru(E')(CO)₂(iPr-DAB)][•]. In the final step of the overall ECEC sequence at room temperature, the five-coordinate anions attack the parent complexes producing the dimers [Ru(E')(CO)₂(iPr-DAB)]₂. In contrast, the non-halide complexes are reversibly reduced to the radical anions [Ru(E)(E')(CO)₂(iPr-DAB)]^{•-} whose stability arises from the strength of the delocalized axial E-Ru-E' bond. Subsequent reduction of [Ru(E')(CO)₂(iPr-DAB)]₂ and [Ru(E)(E')(CO)₂(iPr-DAB)]^{•-} ultimately yields [Ru(E')(CO)₂(iPr-DAB)]⁻. Reverse oxidation of the anions directly results in the recovery of the parent complexes Ru(Cl)(E')(CO)₂(iPr-DAB) and Ru(E)(E')(CO)₂(iPr-DAB). Two different, temperature-controlled mechanisms operate during the oxidation of the Cl complexes. The electronic and geometric structures of [Ru(E)(E')(CO)₂(iPr-DAB)]^{•-} (E, E' ≠ Cl) and [Ru(E')(CO)₂(iPr-DAB)]⁻ are discussed from their UV-visible, IR, NMR, EPR, and resonance Raman data.

IT 195311-51-4

(formation and resonance Raman of)

RN 195311-51-4 HCAPLUS

CN Ruthenate(1-), dicarbonyl[N,N'-1,2-ethanediyldienebis[2-propanamine-κN]](triphenylstannyl)-, sodium (9CI) (CA INDEX NAME)



● Na⁺

CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 67, 72, 73, 77
 IT 195311-51-4

(formation and resonance Raman of)

REFERENCE COUNT: 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
 RE FORMAT

L27 ANSWER 15 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:619668 HCAPLUS

DOCUMENT NUMBER: 127:242361

TITLE: Electrochemical and IR/UV-vis
 Spectroelectrochemical Studies of
 fac-[Mn(X)(CO)₃(iPr-DAB)]_n (n = 0, X = Br, Me, Bz;
 n = +1, X = THF, MeCN, nPrCN, P(OMe)₃; iPr-DAB =
 1,4-Diisopropyl-1,4-diaza-1,3-butadiene) at
 Variable Temperatures: Relation between
 Electrochemical and Photochemical Generation of
 [Mn(CO)₃(α-diimine)]-

AUTHOR(S): Rossenaar, Brenda D.; Hartl, Frantisek; Stufkens,
 Derk J.; Amatore, Christian; Maisonhaute,
 Emmanuel; Verpeaux, Jean-Noel

CORPORATE SOURCE: Anorganisch Chemisch Laboratorium J. H. van't Hoff
 Research Instituut, Universiteit van Amsterdam,
 Amsterdam, 1018 WV, Neth.

SOURCE: Organometallics (1997), 16(21),
 4675-4685

CODEN: ORGND7; ISSN: 0276-7333

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 29 Sep 1997

AB [Mn(X)(CO)₃(iPr-DAB)]_n (n = 0, X = Br; n = +1, X = donor solvent,
 iPr-DAB = 1,4-diisopropyl-1,4-diaza-1,3-butadiene) undergo a
 two-electron reduction according to an ECE sequence. The chemical step (C)
 involves prompt dissociation of the X ligand from the primary 1-electron
 reduction product, followed by instantaneous 1-electron reduction of the five-
 coordinate transient [Mn(CO)₃(iPr-DAB)]• producing
 [Mn(CO)₃(iPr-DAB)]-. The latter complex remains rather stable at T <
 190 K, whereas at higher temps. it undergoes an electron-transfer
 reaction with the parent complexes producing the dimer
 [Mn(CO)₃(iPr-DAB)]₂ (the second C step in the overall ECEC sequence).
 The rate of this reaction decreases in the order THF > MeCN > Br. The
 driving force for this behavior is the more pos. E_{1/2} value of the

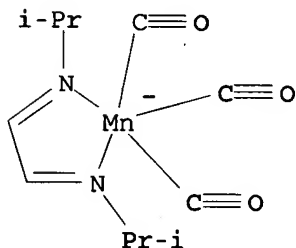
redox couple $[\text{Mn}(\text{CO})_3(\text{iPr-DAB})]^\bullet/-$ relative to those of $[\text{Mn}(\text{Br})(\text{CO})_3(\text{iPr-DAB})]^{0/\bullet-}$ and $[\text{Mn}(\text{X})(\text{CO})_3(\text{iPr-DAB})]^{+/\bullet}$ (X = donor solvent) and a very short lifetime of the primary reduction products. In contrast, the ligand $\text{P}(\text{OMe})_3$ in $[\text{Mn}\{\text{P}(\text{OMe})_3\}(\text{CO})_3(\text{iPr-DAB})]^\bullet$ is bound rather firmly at low temps., where the ECE sequence to $[\text{Mn}(\text{CO})_3(\text{iPr-DAB})]^-$ via $[\text{Mn}(\text{CO})_3(\text{iPr-DAB})]^\bullet$ is only a minor route. The reduction of $[\text{Mn}(\text{X})(\text{CO})_3(\text{iPr-DAB})]$ (X = Me, PhCH_2) at room temperature affords the five-coordinate anion $[\text{Mn}(\text{CO})_3(\text{iPr-DAB})]^-$ via dissociation of X^\bullet from the 1-electron-reduced intermediate $[\text{Mn}(\text{X})(\text{CO})_3(\text{iPr-DAB})]^\bullet$ detectable by cyclic voltammetry for X = Me. Oxidation of the five-coordinate anion $[\text{Mn}(\text{CO})_3(\text{iPr-DAB})]^-$ produces the dimer $[\text{Mn}(\text{CO})_3(\text{iPr-DAB})]_2$, following the reverse ECE(C) sequence involved in the reduction path. The direct dimerization of the radicals [primarily formed, $\text{Mn}(\text{CO})_3(\text{iPr-DAB})]^\bullet$, is probably only a minor alternative route. In the presence of excess $\text{P}(\text{OMe})_3$, the principal oxidation product is $[\text{Mn}\{\text{P}(\text{OMe})_3\}(\text{CO})_3(\text{iPr-DAB})]^+$. The five-coordinate anions $[\text{Mn}(\text{CO})_3(\alpha\text{-diimine})]^-$ can be regarded as strongly π -delocalized complexes with the neg. charge equally distributed over the α -diimine and CO ligands. The intriguing mechanism of their photochem. formation from fac- $[\text{Mn}(\text{Br})(\text{CO})_3(\alpha\text{-diimine})]$ at low temps. was rectified from this spectroelectrochem. study.

IT 195311-42-3

(mechanism of formation in electrochem. reduction or photoredn. of manganese α -diimine complex)

RN 195311-42-3 HCAPLUS

CN Manganate(1-), tricarbonyl $[\text{N},\text{N}'\text{-}1,2\text{-ethanediyldienebis[2-propanamine-}\kappa\text{N}]]^-$, sodium (9CI) (CA INDEX NAME)



● Na^+

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 67, 72, 73

IT 90885-36-2 195311-42-3

(mechanism of formation in electrochem. reduction or photoredn. of manganese α -diimine complex)

REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 16 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:428944 HCAPLUS

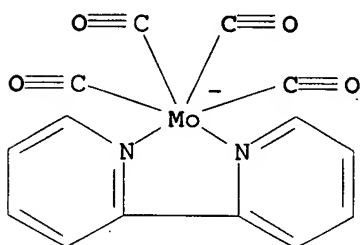
DOCUMENT NUMBER: 127:116675

TITLE: ESR spectra of reduced Mo(0) complexes

AUTHOR(S): Shinozaki, Kazuteru

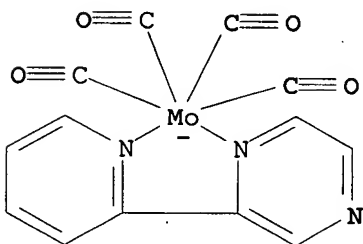
CORPORATE SOURCE: Rigakubu, Yokohama City Univ., Yokohama, 236,

SOURCE: Japan
 Yokohama-shiritsu Daigaku Ronso, Shizen Kagaku
 Keiretsu (1996), 47(1/2), 39-53
 CODEN: YDRSAI; ISSN: 0911-7733
 PUBLISHER: Yokohama-shiritsu Daigaku Gakujutsu Kenkyukai
 DOCUMENT TYPE: Journal
 LANGUAGE: Japanese
 ED Entered STN: 10 Jul 1997
 AB Molybdenum complexes having bipyridine (bpy), bipyrazine (bpz) and
 pyridylpyrazine (pypz), resp., as ligand were synthesized and the ESR
 spectra of the obtained compds. $[\text{Mo}(\text{CO})_4(\text{L})]$ and $\text{Na}[\text{Mo}(\text{CO})_4(\text{L})]$ ($\text{L} =$
 bpy, bpz, pypz) were measured and analyzed. The results, mainly of
 absorption bands, were discussed in view of an interaction between
 metal and ligands, such as metal to ligand charge transfer, (π ,
 π^*) or (n , π^*) transition, localization of unpaired electron,
 etc.
 IT 36581-41-6 192524-67-7 192524-68-8
 (ESR spectra of reduced molybdenum complexes)
 RN 36581-41-6 HCAPLUS
 CN Molybdate(1-), (2,2'-bipyridine- $\kappa\text{N}1, \kappa\text{N}1'$)tetracarbonyl-,
 sodium, (OC-6-22)- (9CI) (CA INDEX NAME)



● Na^+

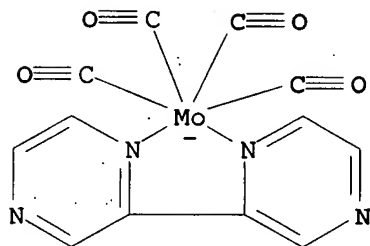
RN 192524-67-7 HCAPLUS
 CN Molybdate(1-), tetracarbonyl[(2-pyridinyl- κN)pyrazine- $\kappa\text{N}1$]-
 , sodium, (OC-6-33)- (9CI) (CA INDEX NAME)



● Na^+

RN 192524-68-8 HCAPLUS
 CN Molybdate(1-), (2,2'-bipyrazine- $\kappa\text{N}1, \kappa\text{N}1'$)tetracarbonyl-,

sodium, (OC-6-22)- (9CI) (CA INDEX NAME)

● Na⁺

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 73

IT Coordination compounds

(ESR spectra of reduced molybdenum complexes)

IT 36581-41-6 192524-67-7 192524-68-8

192524-69-9

(ESR spectra of reduced molybdenum complexes)

L27 ANSWER 17 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:472237 HCAPLUS

DOCUMENT NUMBER: 121:72237

TITLE: Oxidation of intermetallic phases: K₄{Na₂[Tl₂O₆] }
from NaTl and K₂O₂

AUTHOR(S): Lulei, M.; Hoppe, R.

CORPORATE SOURCE: Inst. Anorg. Anal. Chem., Justus-Liebig-Univ.,
Giessen, GermanySOURCE: Zeitschrift fuer Anorganische und Allgemeine
Chemie (1994), 620(5), 781-5
CODEN: ZAACAB; ISSN: 0044-2313

DOCUMENT TYPE: Journal

LANGUAGE: German

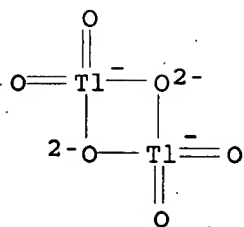
ED Entered STN: 06 Aug 1994

AB K₄{Na₂[Tl₂O₆] } was prepared as transparent, yellow single crystals from NaTl and KO_{1.08} (molar ratio 1:1.3; sealed Ag-cylinder; 450°, 30 d). The structure determination (R = 5.75, R_w = 4.58%) confirms the space group P2₁/c with a 641.3, b 691.1, c 1188.5 pm, β 95.69° and Z = 2. As characteristic building units of the structure there are edge sharing double tetrahedra of isolated [Tl₂O₆] and [Na₂O₆]. The compound is isotypic with Cs₆[In₂O₆] and Rb₆[Tl₂O₆]. The Madelung part of lattice energy, the mean fictive ionic radii, effective coordination nos., and charge distribution are calculated

IT 156395-82-3P, Potassium sodium thallium oxide (K₄Na₂Tl₂O₆)
(preparation and crystal structure and Madelung crystal lattice energy of)

RN 156395-82-3 HCAPLUS

CN Thallate (Tl₂O₆₆-), tetrapotassium disodium (9CI) (CA INDEX NAME)



●4 K⁺

●2 Na⁺

CC 78-2 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 156395-82-3P, Potassium sodium thallium oxide (K₄Na₂Tl₂O₆)
(preparation and crystal structure and Madelung crystal lattice energy of)

L27 ANSWER 18 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:472234 HCAPLUS

DOCUMENT NUMBER: 121:72234

TITLE: Preparation and crystal structure of K₆[Al₂O₆] and Rb₆[Al₂O₆]

AUTHOR(S): Schlaeger, M.; Hoppe, R.

CORPORATE SOURCE: Inst. Anorg. Anal. Chem., Justus-Liebig-Univ., Giessen, Germany

SOURCE: Zeitschrift fuer Anorganische und Allgemeine Chemie (1994), 620(5), 882-7
CODEN: ZAACAB; ISSN: 0044-2313

DOCUMENT TYPE: Journal

LANGUAGE: German

ED Entered STN: 06 Aug 1994

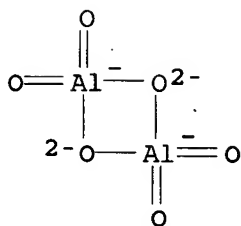
AB Colorless single crystals of K₆[Al₂O₆] prepared from intimate mixts. of KAlO₂ and K₂O (550°, 90 d). The structure determination (R = 2.2, R_w = 2.1%) confirms the space group C2/m with Z = 2, a 698.25, b 1103.54, c 646.49 pm, β 102.49°. Colorless single crystals of hitherto unknown Rb₆[Al₂O₆] were prepared from intimate mixts. of RbAlO₂ and Rb₂O (520°, 120 d). The structure determination results in the residual values R = 7.2, R_w = 4.9%, space group C2/m, a 725.92, b 1143.33, c 678.06 pm, β 104.05°, Z = 2. K₆[Al₂O₆] and Rb₆[Al₂O₆] are isostructural with K₆[Fe₂O₆]. A characteristic structure unit is [Al₂O₆]⁶⁻ consisting of 2 edge-sharing [AlO₄] tetrahedra. Effective coordination nos., mean fictive ionic radii, the Madelung part of lattice energy and the charge distribution are calculated and discussed.

IT 156429-70-8P

(preparation and crystal structure and Madelung crystal lattice energy of)

RN 156429-70-8 HCAPLUS

CN Aluminate (Al₂O₆⁶⁻), hexapotassium (9CI) (CA INDEX NAME)



●6 K⁺

CC 78-2 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 156429-70-8P 156429-71-9P

(preparation and crystal structure and Madelung crystal lattice energy of)

L27 ANSWER 19 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1993:159846 HCAPLUS

DOCUMENT NUMBER: 118:159846

TITLE: Polyoxo alkoxide clusters of vanadium: structural characterization of the decavanadate core in the "fully reduced" vanadium(IV) species [V10O16{(OCH2)3CCH2CH3}4]4- and [V10O14(OH)2{(OCH2)3CCH2OH}4]2- and in the mixed-valence clusters [VIV8VV2O16{(OCH2)3CR}4]2- (R = -CH2CH3, -CH3)

AUTHOR(S): Khan, M. Ishaque; Chen, Qin; Goshorn, D. P.; Zubietta, Jon

CORPORATE SOURCE: Dep. Chem., Syracuse Univ., Syracuse, NY, 13244-4100, USA

SOURCE: Inorganic Chemistry (1993), 32(5), 672-80

CODEN: INOCAJ; ISSN: 0020-1669

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 13 Apr 1993

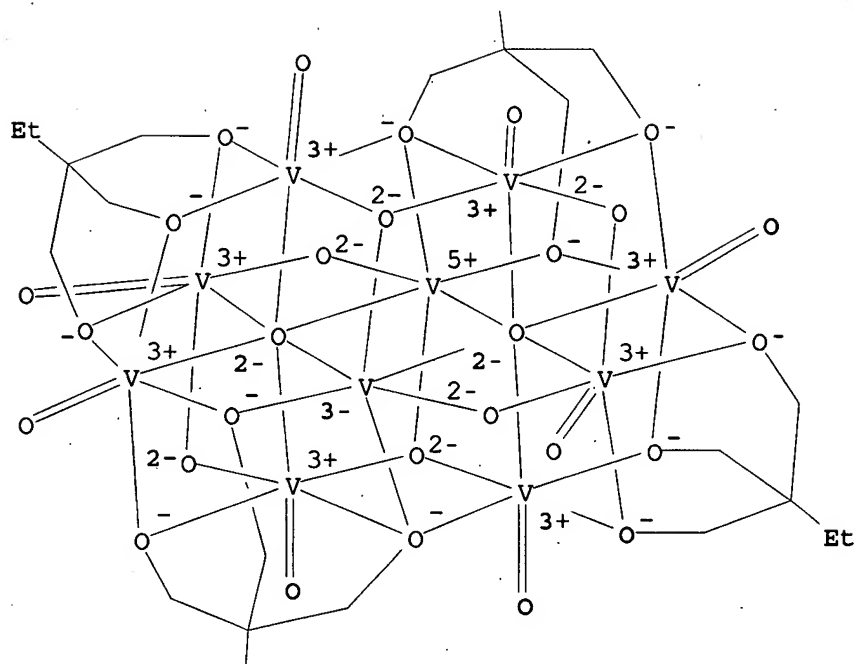
AB The hydrothermal reaction of a mixture of vanadium oxides with (HOCH2)3CCH2OH in the presence of Me3NHCl yields the reduced species (Me3NH)2[VIV10O14(OH)2{(OCH2)CCH2OH}4].2H2O (1). In contrast, the reactions of vanadium oxides with (HOCH2)3CR3, using NaCl, KCl, or Bu4NCl as mineralizers, yield the mixed-valence species M2[VIV8VV2O16{(OCH2)3CR}4].nH2O (M = Na, n = 0, R = Et (2); M = K, n = 2, R = Et (3); M = Bu4N, n = 0, R = Me (4)). These compds. exhibit structures based on the decavanadate core {V10O28}, with ten doubly-bridging and two triply-bridging oxo groups of this parent structure replaced by the alkoxy donors of the ligands. The structural consequences of protonation of the core in 1 and of oxidation of two vanadium centers in 2-4 are presented. The crystal packing patterns of anion clusters and cations in these species reveal the common structural motif of anion stacking to produce polar and nonpolar channels. The influence of the cation on the details of the extended structure is apparent in the crystal packing descriptions. Crystal data were determined for 1 and 2 in monoclinic space group P21/c, for 3.2H2O in triclinic space group P.hivin.1 and for 4 in monoclinic space group, P21/n.

IT 146622-15-3P
(prepn and spin coupling and crystal structure of)
RN 146622-15-3 HCAPLUS
CN Vanadate(2-), bis[μ 3-[2-ethyl-2-(hydroxymethyl)-1,3-
propanediolato(3-)-O1,O2:O1,O3:O2,O3]]bis[μ 4-[2-ethyl-2-
(hydroxymethyl)-1,3-propanediolato(3-)-O1:O1,O2:O1,O3:O2,O3]]tetra-
 μ -oxodi- μ 3-oxodi- μ 6-oxooctaoxodeca-, disodium (9CI) (CA
INDEX NAME)

PAGE 1-A

Et
|

PAGE 2-A



PAGE 3-A

Et

● 2 Na⁺

IT 146622-19-7P

(preparation and crystal structure and electrochem. oxidation and reaction of, with fluoroboric acid)

RN 146622-19-7 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, bis[μ₃-[2-(hydroxymethyl)-2-methyl-1,3-propanediolato(3-)-O1,O2:O1,O3:O2,O3]]bis[μ₄-[2-(hydroxymethyl)-2-methyl-1,3-propanediolato(3-)-O1:O1,O2:O1,O3:O2,O3]]tetra-μ-oxodi-μ₃-oxodi-μ₆-oxooctaoxodecavanadate(2-) (2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 146622-18-6

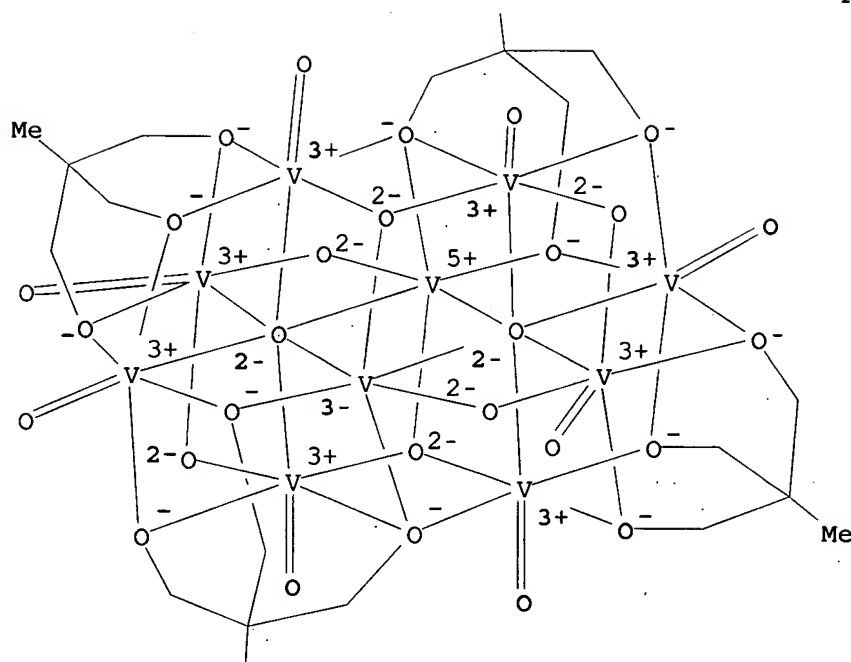
CMF C20 H36 O28 V10

CCI CCS

PAGE 1-A

Me

PAGE 2-A



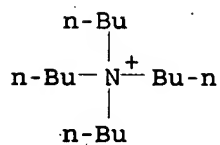
PAGE 3-A

Me

CM 2

CRN 10549-76-5

CMF C16 H36 N



IT 146622-16-4P

(preparation and crystal structure of)

RN 146622-16-4 HCAPLUS

CN Vanadate(2-), bis[μ₃-[2-ethyl-2-(hydroxymethyl)-1,3-propanediolato(3-)-O1,O2:O1,O3:O2,O3]]bis[μ₄-[2-ethyl-2-(hydroxymethyl)-1,3-propanediolato(3-)-O1:O1,O2:O1,O3:O2,O3]]tetra-μ-oxodi-μ₃-oxodi-μ₆-oxooctaoxodeca-, dipotassium, dihydrate
(9CI) (CA INDEX NAME)

PAGE 1-A

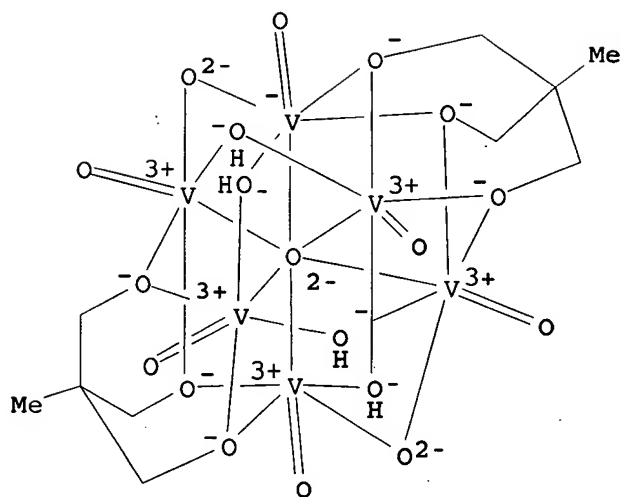
Et

Et

 $\bullet 2 \text{ H}_2\text{O}$

L27 ANSWER 20 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1992:419144 HCAPLUS
DOCUMENT NUMBER: 117:19144
TITLE: Coordination compounds of
polyoxovanadates with a hexametalate core.
Chemical and structural characterization of
[VV6O13 [(OCH2)3CR]2]2-, [VV6O11 (OH)2 [(OCH2)3CR]2],

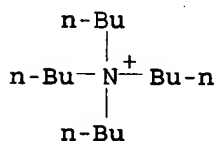
[VIV4VV2O9(OH)4[(OCH2)3CR]2]2-, and
[VIV6O7(OH)6](OCH2)3CR]2]2-
AUTHOR(S): Chen, Qin; Goshorn, David P.; Scholes, Charles P.;
Tan, Xiao Ling; Zubieta, Jon
CORPORATE SOURCE: Dep. Chem., Syracuse Univ., Syracuse, NY, 13244,
USA
SOURCE: Journal of the American Chemical Society (
1992), 114(12), 4667-81
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 11 Jul 1992
AB Reactions of (HOCH2)3CR (R = NO2, CH2OH, Me) with [Bu4N]3[H3V10O28] in
MeCN yield [Bu4N]2[V6O13{(OCH2)3CR}2] (I). Complexes of this general
class are electrochem. active, displaying a reversible 1-electron
reduction at -0.67-(1.20) V, relative to the ferrocene/ferrocenium couple.
The reduced species [VIVV5VO13{(OCH2)3CNO2}2]3- exhibits an 8-line EPR
spectrum at 4.2 K, centered at $g \approx 1.95$. Broadening of EPR
spectral features as the temperature is raised from 4.2 to 83 K is evidence
for increased motion of the unpaired electron consistent with
thermally induced electron transfer between VIV and VV states. Chemical
redns. of I (R = Me) with organohydrazines yield reduced,
hydroxy-bridged [Bu4N]2[VIV4VV2O9(OH)4{(OCH2)3CMe}2] (II) and
[Bu4N]2[VIV6O7(OH)6{(OCH2)3CMe}2].2CH2Cl2.0.5PhNNPh (III). The
protonation sites were established by x-ray crystallog. Protonation
and reduction can be decoupled such that reaction of I (R = Me) with
HBF4.OEt2 yields diprotonated [V6O11(OH)2{CH3C(CH2O)3}2] (IV) wherein
the site of protonation was established by x-ray crystallog. as 2 of
the bridging oxo groups. Crystal data are as follows: I (R = NO2);
triclinic space group P1; Z = 1, R = 0.049, Rw = 0.062; I.DMF (R =
CH2OH); monoclinic, space group P21/c, Z = 2, R = 0.054, Rw = 0.060; I
(R = CH3); triclinic space group, P.hivin.1, Z = 1, R = 0.055, Rw =
0.059; IV.2DMF.Et2O; triclinic space group, P.hivin.1, Z = 1, R =
0.043, Rw = 0.049; II; triclinic space group P.hivin.1, Z = 1, R =
0.043, Rw = 0.045; III.2CH2Cl2.0.5PhNNPh; triclinic space group
P.hivin.1, Z = 2, R = 0.042, Rw = 0.049.
IT 141438-82-6P
(preparation and crystal structure and IR spectrum and magnetic
susceptibility and oxidation potential of)
RN 141438-82-6 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, tetra- μ -hydroxybis[μ 3-[2-
(hydroxymethyl)-2-methyl-1,3-propanediolato(3-)-O1,O2:O1,O3:O2,O3]]di-
 μ -oxo- μ 6-oxohexaoxohexavanadate(2-) (2:1) (9CI) (CA INDEX NAME)
CM 1
CRN 141438-81-5
CMF C10 H22 O19 V6
CCI CCS



CM 2

CRN 10549-76-5

CMF C16 H36 N



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 141438-82-6P

(preparation and crystal structure and IR spectrum and magnetic susceptibility and oxidation potential of)

L27 ANSWER 21 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1992:247279 HCAPLUS

DOCUMENT NUMBER: 116:247279

TITLE: Synthesis and crystal and molecular structure of (NH₄)₄[V₁₀O₁₆{EtC(CH₂OH)₃}₄].4H₂O, a decavanadyl cluster

AUTHOR(S): Khan, M. Ishaque; Chen, Qin; Zubieta, Jon

CORPORATE SOURCE: Dep. Chem., Syracuse Univ., Syracuse, NY, 13244, USA

SOURCE: Journal of the Chemical Society, Chemical Communications (1992), (4), 305-6

CODEN: JCCCAT; ISSN: 0022-4936

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 13 Jun 1992

AB The hydrothermal reaction of (NH₄)VO₃ with EtC(CH₂OH)₃ yields the oxoalkoxovanadium(IV) cluster, (NH₄)₄[V₁₀O₁₆{EtC(CH₂OH)₃}₄].4H₂O, an unusual polyoxoanion coordination complex with a reduced {V₁₀O₂₈} core. Results of an x-ray crystallog. study are summarized.

IT 139942-83-9P

(preparation and crystal structure of)

RN 139942-83-9 HCAPLUS

CN Vanadate(4-), bis[μ 3-[2-ethyl-2-(hydroxymethyl)-1,3-propanediolato(3-)-O1,O2:O1,O3:O2,O3]]bis[μ 4-[2-ethyl-2-(hydroxymethyl)-1,3-propanediolato(3-)-O1:O1,O2:O1,O3:O2,O3]]tetra- μ -oxodi- μ 3-oxodi- μ 6-oxooctaoxodeca-, tetraammonium, tetrahydrate (9CI) (CA INDEX NAME)

PAGE 1-A

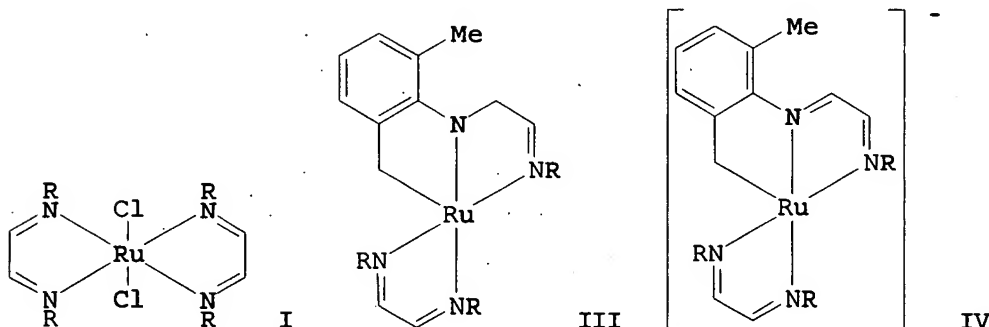
Et
|

Et

● 4 H₂O

USHA SHRESTHA EIC 1700 REM 4B31

CORPORATE SOURCE: Inst. Anorg. Angew. Chem., Univ. Hamburg, Hamburg,
W-2000/13, Germany
SOURCE: Journal of Organometallic Chemistry (1991
) , 411(3), 445-56
CODEN: JORCAI; ISSN: 0022-328X
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 27 Dec 1991
GI



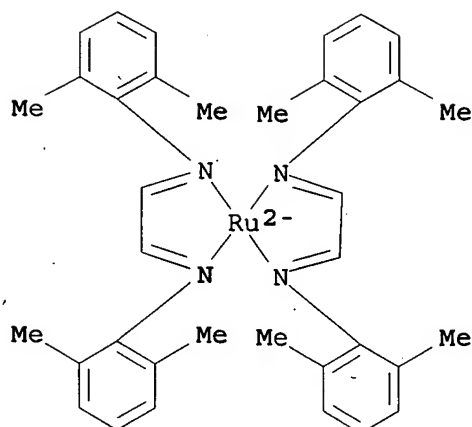
AB Bis(diazadiene)dichlororuthenium (R-DAD) 2RuCl_2 (I) (R-DAD = RN:CHCH:NR with R = 2,6-xylyl) reacts with 2 mol of potassium in THF to give the unsatd. (R-DAD) 2Ru (II) and its isomer (III), in which one of the o-Me groups of R is metalated. The hydrogen is transferred to the neighboring imine carbon of the DAD to form an iminaminate type ligand, $\text{N:CHCH}_2\text{N}$. Reduction of I in the presence of hydrogen or addition of hydrogen to II affords a hydride with one Ru-H bond and one iminaminate ligand. The addition is reversible and at higher temps. II and III are formed again. Reduction of I with 3-4 mol of potassium gives a reduction product of composition $\text{K}_2[\text{Ru}(\text{R-DAD})_2]$ and a deprotonation product (IV). A single crystal x-ray diffraction study was performed for IV. The coordination of the Ru^0 center is intermediate between square pyramidal and trigonal bipyramidal with four imine N donors and a carbon ligand, resulting from the o-Me metalation of one R-DAD. $[\text{K}(\text{tmeda})_2]^+$ is the counterion. The potassium ion being insufficiently saturated by the tmeda ligands has further contacts with some of the carbon atoms of the o-Me metalated aromatic ring.

IT 136167-70-9P

(preparation of)

RN 136167-70-9 HCAPLUS

CN Ruthenate(2-), bis[N,N'-1,2-ethanediylidenebis[2,6-dimethylbenzenamine]-N,N']-, dipotassium, (T-4)- (9CI) (CA INDEX NAME)



● 2 K⁺

CC 29-13 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 75
 IT 123594-67-2P 136167-68-5P 136167-69-6P 136167-70-9P
 136167-71-0P
 (preparation of)

L27 ANSWER 23 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1991:6718 HCAPLUS

DOCUMENT NUMBER: 114:6718

TITLE: The 1,4- and 2,3-diazadiene complexes of vanadium carbonyl. Their ⁵¹V NMR properties, and the crystal structure of cis-[η⁵-C₅Me₅V(CO)₂Me₂CHN:CHCH:NCHMe₂]

AUTHOR(S): Woitha, Claus; Behrens, Ulrich; Vergopoulos, Vassilios; Rehder, Dieter

CORPORATE SOURCE: Inst. Anorg. Angewandte Chem., Univ. Hamburg, Hamburg, D-2000/13, Germany

SOURCE: Journal of Organometallic Chemistry (1990), 393(1), 97-109

CODEN: JORCAI; ISSN: 0022-328X

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 114:6718

ED Entered STN: 12 Jan 1991

AB The reaction between Cp'⁺V(CO)₃THF (Cp' = C₅H₅, C₅H₄SiMe₃, C₅Me₅) or [Et₄N][V(CO)₅THF] and diazadienes [RN:CHCH:NR (dad); R'⁺HC:NN:CHR' (azine); L] at low temperature yields the complexes cis-[Cp'⁺V(CO)₂L] (R = Me₂CH, Me₃C, n-C₅H₁₁, Ph, 4-MeOC₆H₄; R' = p-Tol, 4-HOC₆H₄, 4-MeOC₆H₄) or cis-[Et₄N][V(CO)₄L] (R = p-Tol, 4-MeOC₆H₄, R' = Ph). In some cases (R = n-C₅H₁₁, Me₂CH; R' = Ph), direct irradiation of C₅Me₅V(CO)₄ in the presence of L leads to the same complexes. With R' = Me, the mono-substituted complexes Cp'⁺V(CO)₃L or [Et₄N][V(CO)₅L] are formed. The δ(⁵¹V) values of cis-[Cp'⁺V(CO)₂L] (-346 to -498 ppm for L = dad, -300 to -393 ppm for L = azine; relative to VOCl₃) indicate that the ligands are comparable in overall ligand strength to amines. The crystal structure has been determined for the title compound (I). The dad ligand in I forms a chelate-5 ring [d(VN) = 206.7(2) pm] in the

envelope conformation and exhibits partial enediamine coordination [$d(CC) = 137.2(7)$ ppm]. Structure information has also been obtained for *cis*-[C5Me5V(CO)₂PhHC:NN:CHPh] (II): benzaldazine in II is coordinated in the η^2 -(NN) mode (perpendicular to the mirror plane of the mol.) with $d(VN) = 201.9(5)$ and $d(NN) = 140.0(12)$ pm.

IT 130565-12-7P 130565-14-9P

(preparation and spectra of)

RN 130565-12-7 HCAPLUS

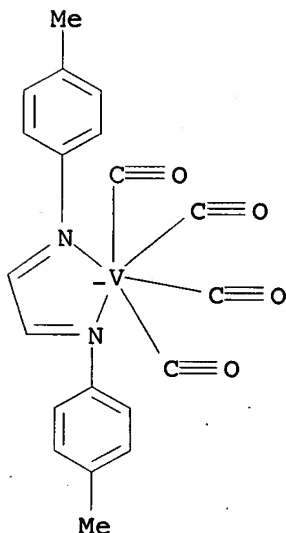
CN Ethanaminium, N,N,N-triethyl-, (OC-6-22)-tetracarbonyl[N,N'-1,2-ethanediylidenebis[4-methylbenzenamine]-N,N']vanadate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 130565-11-6

CMF C20 H16 N2 O4 V

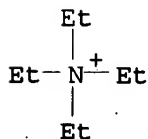
CCI CCS



CM 2

CRN 66-40-0

CMF C8 H20 N



RN 130565-14-9 HCAPLUS

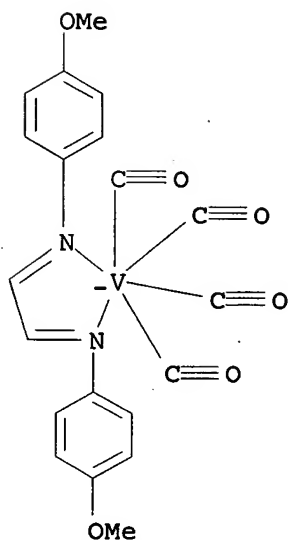
CN Ethanaminium, N,N,N-triethyl-, (OC-6-22)-tetracarbonyl[N,N'-1,2-ethanediylidenebis[4-methoxybenzenamine]-N,N']vanadate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 130565-13-8

CMF C20 H16 N2 O6 V

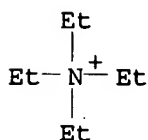
CCI CCS



CM 2

CRN 66-40-0

CMF C8 H20 N



CC 29-10 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 22, 75

IT	130564-99-7P	130565-00-3P	130565-01-4P	130565-02-5P
	130565-03-6P	130565-04-7P	130565-05-8P	130565-07-0P
	130565-08-1P	130565-10-5P	130565-12-7P	
	130565-14-9P	130565-15-0P	130595-14-1P	130595-15-2P
	130691-40-6P	130691-41-7P	130691-42-8P	130691-44-0P
	130691-45-1P	130691-46-2P	130691-48-4P	130712-47-9P
	130712-48-0P	130712-49-1P		

(preparation and spectra of)

L27 ANSWER 24 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:603761 HCAPLUS

DOCUMENT NUMBER: 113:203761

TITLE: Synthesis and crystal structure of
 hexa(tetramethylammonium) potassiovanadate
 ([(CH₃)₄N]₆ [KV₁₅O₃₆])

AUTHOR(S): Zhou, Kangjing; Li, Xioaping

CORPORATE SOURCE: Fujian Inst. Res. Struct. Matter, Acad. Sin.,
Fuzhou, Peop. Rep. China

SOURCE: Zeitschrift fuer Kristallographie (1990
) , 190(1-2), 97-101
CODEN: ZEKRDZ; ISSN: 0044-2968

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 23 Nov 1990

AB K2VO(NCS)4 reacted with serine and aspartic acid and subsequently with
Me4NCl and KOH to form (Me4N)6KV15O36. The crystals are hexagonal,
space group P63/mmc, a 13.852(2), c 20.107(7) Å, Z = 2, and RW =
0.064. KV15O366- is nearly spherical, having D3h symmetry. Each V
atom is coordinated by 5 O atoms to form a tetragonal
pyramid. Fifteen pyramids are connected to each other via corners or
edges of the basal planes. A large cavity in the center is .apprx.4
Å in free diameter. The K+ is in the center of the cavity. The
distances between K+ and 21 O atoms located in the interior surface of
the cavity are 3.33-3.87 Å and the distances between K+ and 15 V
atoms are 3.32-3.53 Å. Six Me4N+ around the anion form a trigonal
prism.

IT 130218-89-2P
(preparation and crystal structure of)

RN 130218-89-2 HCAPLUS

CN Methanaminium, N,N,N-trimethyl-, potassium tri-μ-oxooctadeca-μ3-
oxopentadeca-oxopentadecavanadate(7-) (6:1:1) (9CI) (CA INDEX NAME)

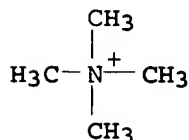
CM 1

CRN 130218-88-1
CMF 036 V15
CCI CCS

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 51-92-3
CMF C4 H12 N



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75

IT 130218-89-2P
(preparation and crystal structure of)

L27 ANSWER 25 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:525188 HCAPLUS

DOCUMENT NUMBER: 113:125188

TITLE: Topologically interesting cages for negative ions
with extremely high coordination
numbers: an unusual property of vanadium-oxygen
clusters

AUTHOR(S): Mueller, Achim; Penk, Michael; Rohlfing, Ralf;

CORPORATE SOURCE: Krickemeyer, Erich; Doering, Joachim
Fak. Chem., Univ. Bielefeld, Bielefeld, D-4800/1,
Germany

SOURCE: Angewandte Chemie (1990), 102(8), 927-9
CODEN: ANCEAD; ISSN: 0044-8249

DOCUMENT TYPE: Journal

LANGUAGE: German

ED Entered STN: 29 Sep 1990

AB $\text{Cs}_9[\text{H}_4\text{V}_3\text{O}_{12}\text{X}] \cdot 12\text{H}_2\text{O}$ ($\text{X} = \text{Br}, \text{Cl}$), $(\text{NMe}_4)_6[\text{V}_{15}\text{O}_{36}\text{X}] \cdot 4\text{H}_2\text{O}$,
 $\text{Li}_7[\text{V}_{15}\text{O}_{36}(\text{CO}_3)] \cdot n\text{H}_2\text{O}$ and $\text{K}_9[\text{H}_4\text{V}_3\text{O}_{12}\text{X}_1] \cdot 16\text{H}_2\text{O}$ ($\text{X}_1 = \text{X}, \text{I}$) were prepared
and characterized by x-ray crystallog. The Cs compds. crystallized in
space group $\text{C}2/c$, the K compds. in $\text{P}4_12_12_1$, NMe_4^+ compound in $\text{P}6_3/\text{mmc}$
and the Li compound in $\text{P}2_1/\text{m}$. The V-O cage structures enclose a X_1 or
carbonate anion.

IT 110550-46-4P 128134-48-5P
(preparation and crystal structure of)

RN 110550-46-4 HCAPLUS

CN Methanaminium, N,N,N-trimethyl-, μ_6 -chlorotri- μ -oxooctadeca-
 μ_3 -oxopentadeca-oxopentadecavanadate(6-) (6:1), tetrahydrate (9CI)
(CA INDEX NAME)

CM 1

CRN 110550-45-3

CMF C4 H12 N . 1/6 Cl O36 V15

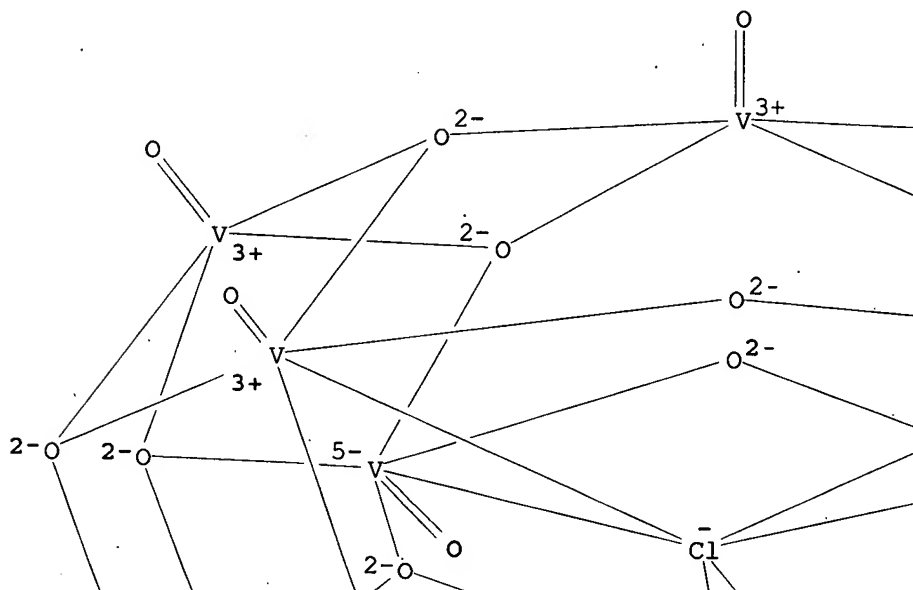
CM 2

CRN 441286-66-4

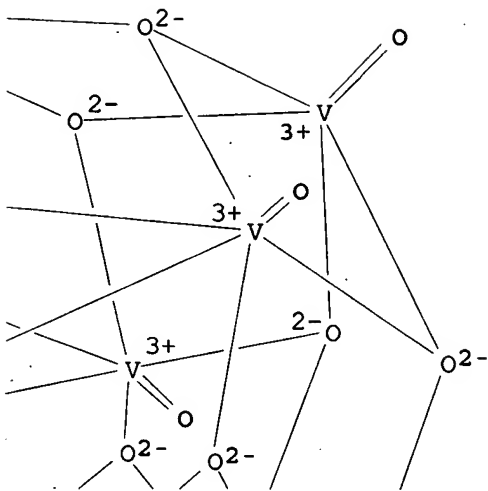
CMF Cl O36 V15

CCI CCS

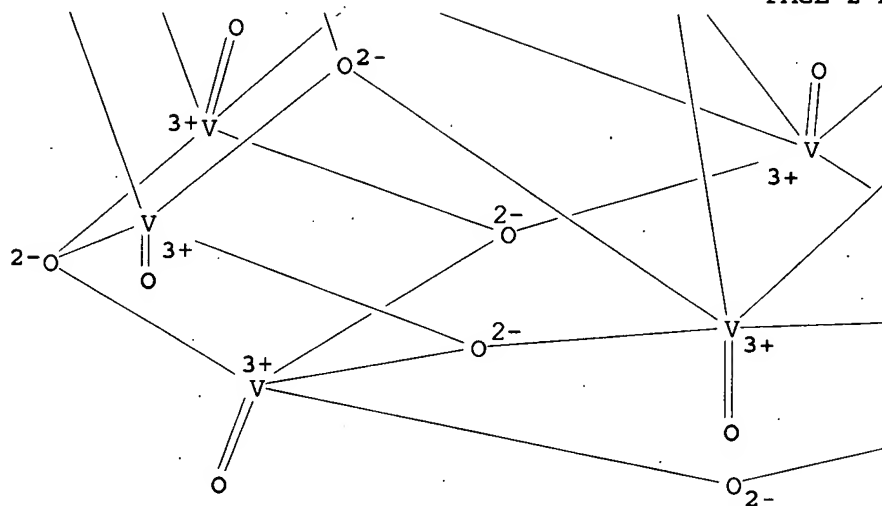
PAGE 1-A



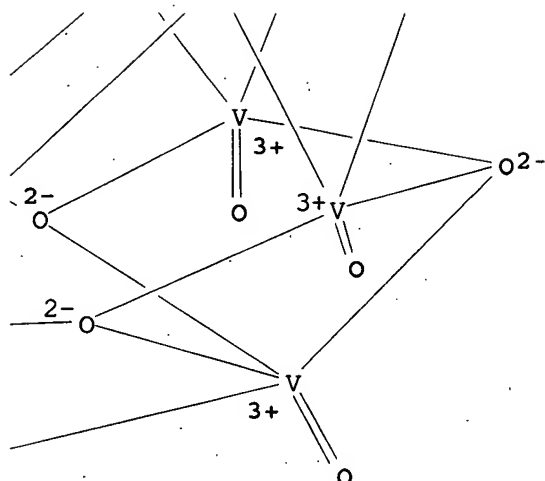
PAGE 1-B



PAGE 2-A



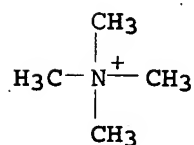
PAGE 2-B



CM 3

CRN 51-92-3

CMF C4 H12 N



RN 128134-48-5 HCAPLUS

CN Methanaminium, N,N,N-trimethyl-, bromide tri- μ -oxooctadeca- μ 3-oxopentadeca-oxopentavanadate(5-) (6:1:1), tetrahydrate (9CI) (CA INDEX NAME)

CM 1

CRN 128134-47-4

CMF C4 H12 N . 1/6 Br O36 V15

CM 2

CRN 256486-89-2

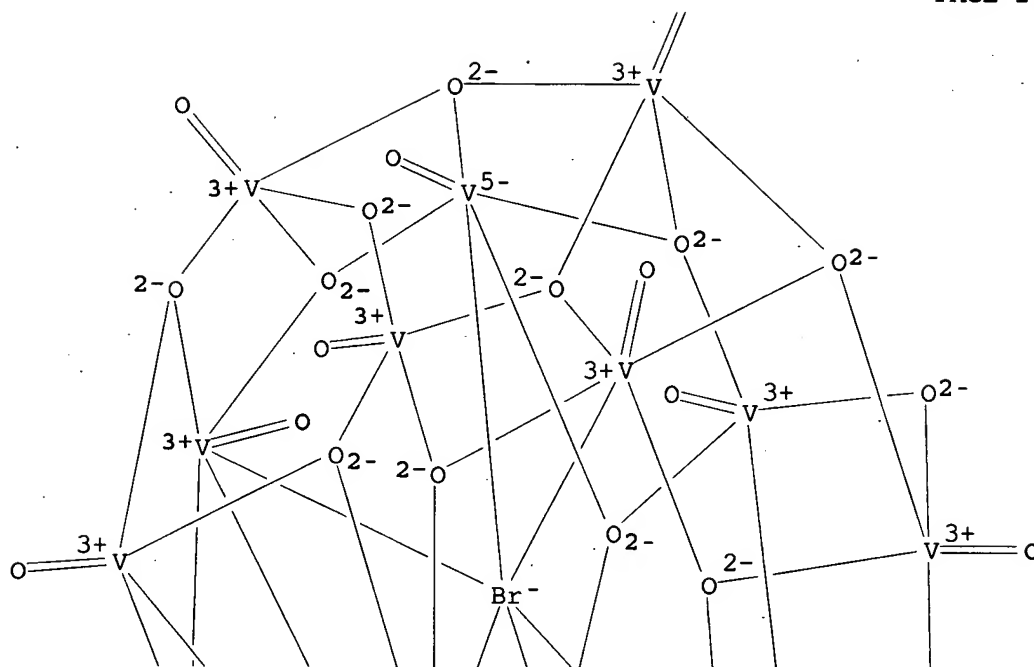
CMF Br O36 V15

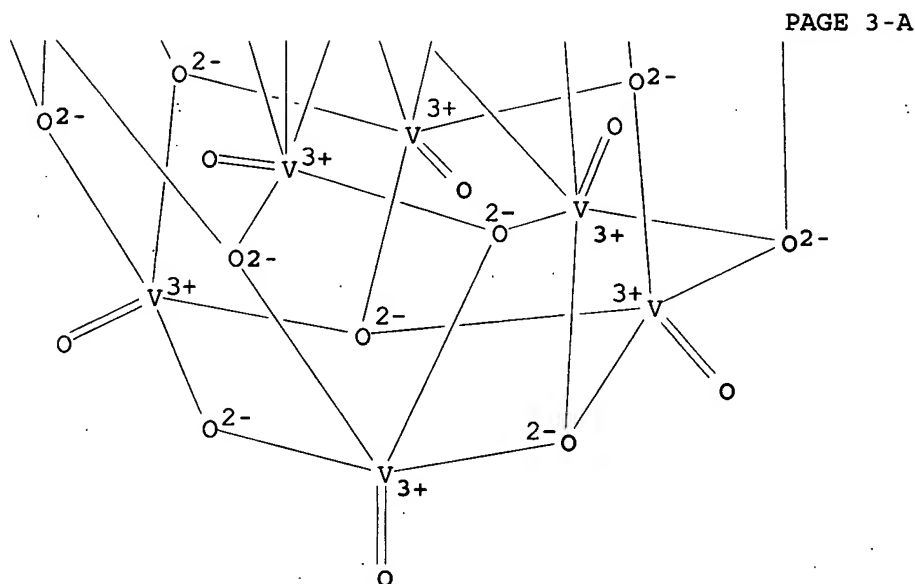
CCI CCS

PAGE 1-A

O

PAGE 2-A

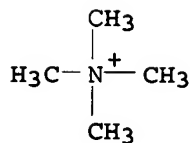




CM 3

CRN 51-92-3

CMF C4 H12 N



CC 78-3 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 110550-46-4P 128134-48-5P 128164-17-0P

128164-18-1P 128164-19-2P 128164-20-5P 128190-37-4P

128302-18-1P

(preparation and crystal structure of)

L27 ANSWER 26 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:451363 HCAPLUS

DOCUMENT NUMBER: 113:51363

TITLE: Coordination and organometallic compounds based on the stable 1-hydroxy-2,4,6,8-tetrakis(tert-butyl)phenoxazin-10-yl radical

AUTHOR(S): Karsanov, I. V.; Ivakhnenko, E. P.; Khandkarova, V. S.; Prokof'ev, A. I.; Rubezhov, A. Z.; Kabachnik, M. I.

CORPORATE SOURCE: A. N. Nesmeyanov Inst. Organoelem. Compd., Moscow, USSR

SOURCE: Journal of Organometallic Chemistry (1989), 379(1-2), 1-25

CODEN: JORCAI; ISSN: 0022-328X

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 03 Aug 1990

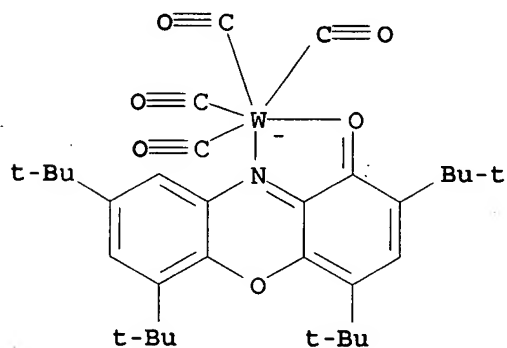
AB A new method for the preparation of a stable 1-hydroxy-2,4,6,8-tetrakis(tert-butyl)phenoxazin-10-yl radical by oxidation of 3,5-di-tert-butyl-o-aminophenol with 3,5-di-tert-butyl-o-benzoquinone is reported. Interaction of the radical with the coordination or the organic compds. of various metals has been studied.

IT 112813-08-8

(formation and ESR and reactions of)

RN 112813-08-8 HCAPLUS

CN Tungstate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)



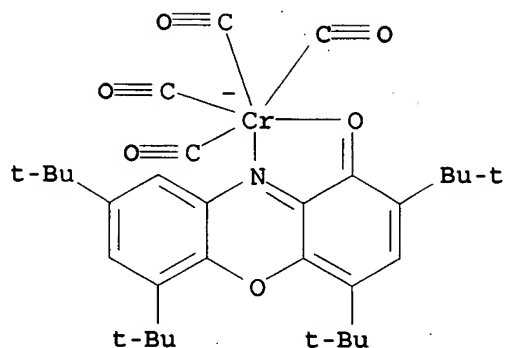
● K⁺

IT 112813-03-3 112813-05-5

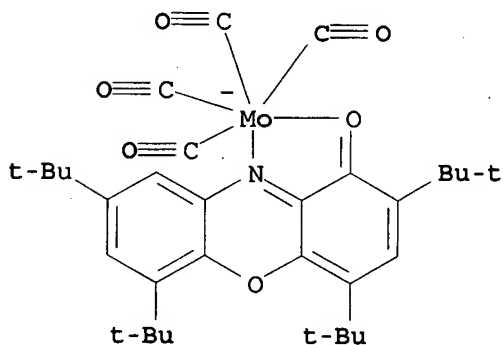
(formation and ESR and reactions of, with tri-Bu phosphite or phenoxazinone)

RN 112813-03-3 HCAPLUS

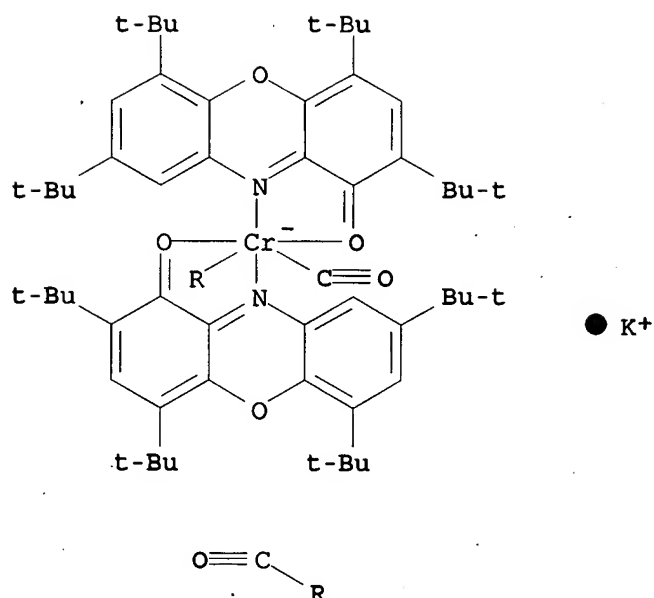
CN Chromate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)

● K⁺

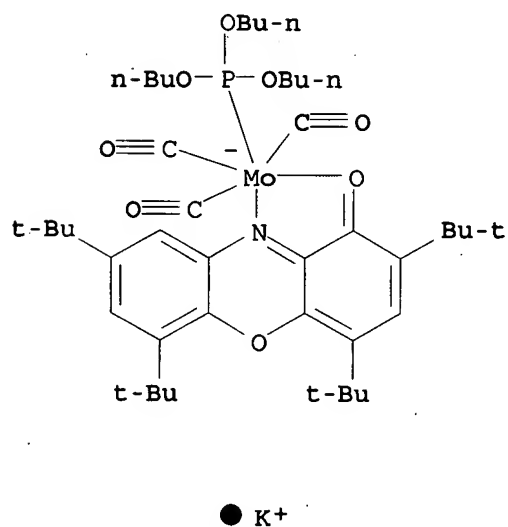
RN 112813-05-5 HCAPLUS
 CN Molybdate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)

● K⁺

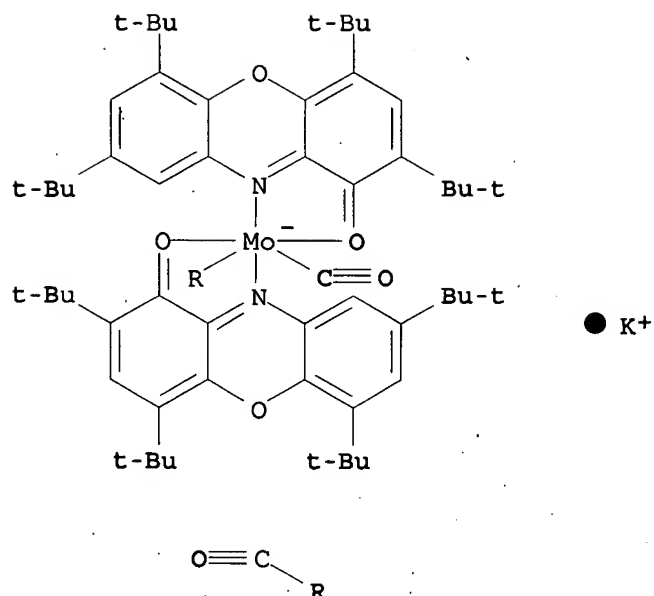
IT 127899-00-7 127900-04-3 127900-05-4
 127900-06-5 127925-33-1
 (formation and ESR of)
 RN 127899-00-7 HCAPLUS
 CN Chromate(1-), dicarbonylbis[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium (9CI) (CA INDEX NAME)



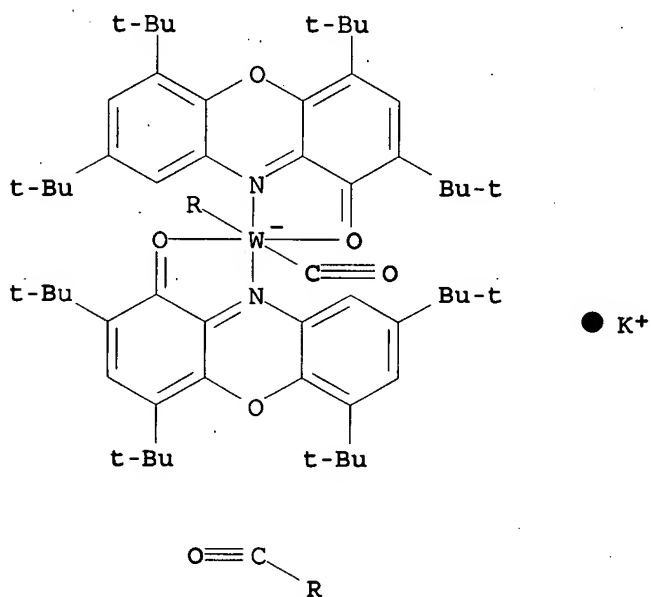
RN 127900-04-3 HCAPLUS
 CN Molybdate(1-), tricarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1](tributyl phosphite-P)-, potassium, (OC-6-44)-(9CI) (CA INDEX NAME)



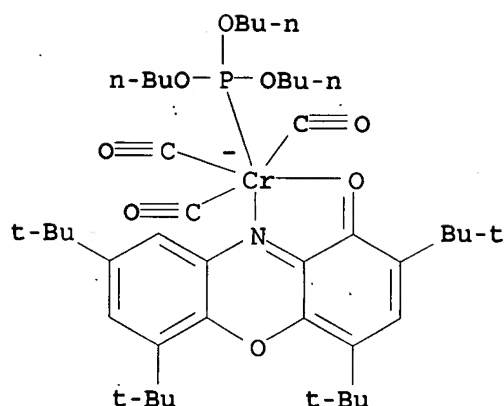
RN 127900-05-4 HCAPLUS
 CN Molybdate(1-), dicarbonylbis[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium (9CI) (CA INDEX NAME)



RN 127900-06-5 HCAPLUS
 CN Tungstate(1-), dicarbonylbis[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium (9CI) (CA INDEX NAME)



RN 127925-33-1 HCAPLUS
 CN Chromate(1-), tricarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1](tributyl phosphite-P)-, potassium, (OC-6-44)-(9CI) (CA INDEX NAME)



● K⁺

- CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 28, 29
- IT 112813-08-8
 (formation and ESR and reactions of)
- IT 112813-03-3 112813-05-5
 (formation and ESR and reactions of, with tri-Bu phosphite or phenoxazinone)
- IT 109-99-9D, chromium carbonyl complexes with phenoxazine derivative radicals 7440-47-3D, Chromium, complexes with carbonyl and phenoxazine derivative radicals and THF 12090-11-8D, reaction products with phenoxazine radicals 20319-35-1D, reaction products with π -complexes of osmium and rhodium and ruthenium 37366-09-9D, reaction products with phenoxazine radicals 53886-39-8D, reaction products with phenoxazine radicals 55429-04-4D, chromium THF carbonyl complexes 109145-40-6 109145-42-8 109145-44-0 109145-45-1 109145-47-3 109776-22-9 111932-02-6 111932-03-7 111932-04-8 112365-15-8 112365-17-0 112365-18-1 112365-20-5 112365-24-9 127829-16-7 127829-24-7 127829-25-8 127829-26-9 127829-26-9D, reaction products with π -complexes of osmium and rhodium and ruthenium 127829-27-0 127829-29-2 127829-30-5 127859-02-3 127899-00-7 127899-04-1 127900-04-3 127900-05-4 127900-06-5 127925-32-0 127925-33-1
 (formation and ESR of)

L27 ANSWER 27 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:86781 HCAPLUS

DOCUMENT NUMBER: 108:86781

TITLE: ESR spectra of ion-radical complexes of chromium and molybdenum with the 1-H-1-oxo-2,4,6,8-tetrakis(tert-butyl)phenoxazyl ligand

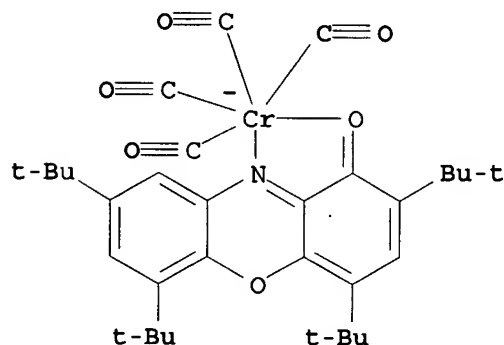
AUTHOR(S): Solodovnikov, S. P.; Karsanov, I. V.; Prokof'ev, A. I.; Bubnov, N. N.; Kabachnik, M. I.

CORPORATE SOURCE: Inst. Elementoorg. Soedin. im. Nesmeyanova, Moscow, USSR

SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1987), (10), 2171-8

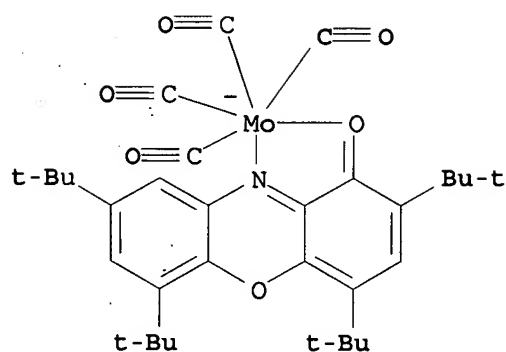
CODEN: IASKA6; ISSN: 0002-3353

DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 ED Entered STN: 05 Mar 1988
 AB Cr, Mo and W complexes with 1-H-1-oxo-2,4,6,8-tetrakis(tert-butyl)phenoxazyl ($L^{\bullet-}$) were prepared from the Group VIB carbonyls and the corresponding phenoxazine with UV irradiation or KL. In the Cr complexes the ligand is in the anion radical form whereas in the Mo complexes it is in the dianion form. The stepwise mechanism of the addition of KL to the Group VIB carbonyls is discussed. In these complexes L is bidentate, coordinating through the N and oxyl O atoms.
 IT 112813-03-3P 112813-05-5P
 (formation and ESR and reaction of, with triphenylphosphine oxide)
 RN 112813-03-3 HCAPLUS
 CN Chromate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)



● K⁺

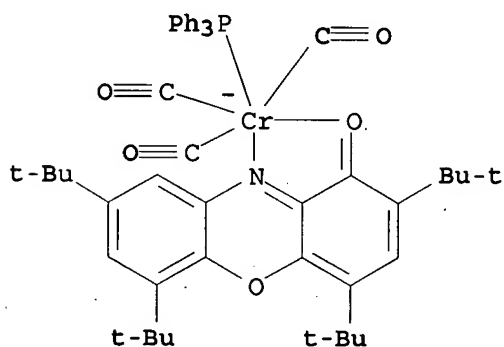
RN 112813-05-5 HCAPLUS
 CN Molybdate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)

● K⁺

IT 112813-04-4P 112813-06-6P 112813-08-8P
(formation and ESR of)

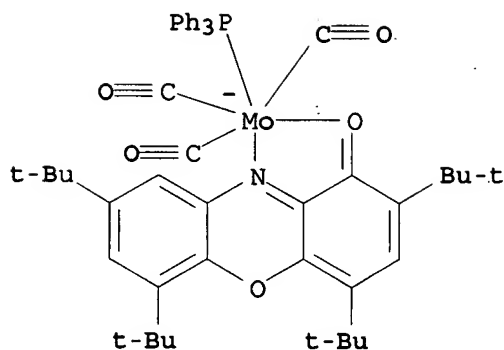
RN 112813-04-4 HCAPLUS

CN Chromate(1-), tricarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1](triphenylphosphine)-, potassium (9CI) (CA INDEX NAME)

● K⁺

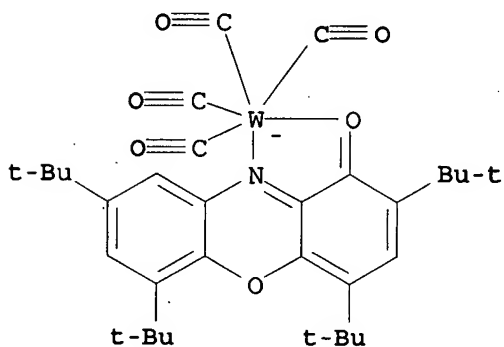
RN 112813-06-6 HCAPLUS

CN Molybdate(1-), tricarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1](triphenylphosphine)-, potassium (9CI) (CA INDEX NAME)



● K⁺

RN 112813-08-8 HCAPLUS
 CN Tungstate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)



● K⁺

CC 78-7 (Inorganic Chemicals and Reactions)
 IT 112813-03-3P 112813-05-5P
 (formation and ESR and reaction of, with triphenylphosphine oxide)
 IT 7439-98-7DP, complexes with oxotetrakis(tert-butyl)phenoxazyl
 7440-33-7DP, complexes with oxotetrakis(tert-butyl)phenoxazyl
 7440-47-3DP, complexes with oxotetrakis(tert-butyl)phenoxazyl
 55429-04-4DP, Group VIB metal complexes 112813-04-4P
 112813-06-6P 112813-07-7P 112813-08-8P
 (formation and ESR of)

L27 ANSWER 28 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1986:582712 HCAPLUS
 DOCUMENT NUMBER: 105:182712
 TITLE: Heteropolytungstates with titanium(IV) and
 nickel(II). VI. The behavior of the nickel(II)

undecatungstotitanate(IV) and nickel(II) pentatungstotitanate(IV) anions towards cationites, in acidic and neutral media

AUTHOR(S): Vatulescu, Rodica; Budiu, T.; Marcu, G.; Pal, Irina

CORPORATE SOURCE: Inst. Chem., Cluj-Napoca, 3400, Rom.

SOURCE: Revue Roumaine de Chimie (1986), 31(2), 199-207

CODEN: RRCHAX; ISSN: 0035-3930

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 15 Nov 1986

AB Ion exchange of $K_6[H_2ONiTiW_{11}O_{39}]$, $(NH_4)_6[H_2ONiTiW_{11}O_{39}]$ and $Na_4[H_2ONiTiW_5O_{20}]$ with Amberlite IR-120 (K^+ , NH_4^+ and H^+ forms) and Zerolite 225 (Na^+ and H^+ forms) were studied by chemical anal. and UV spectrophotometry. The data indicate that the 2 heteroatoms (Ti and Ni) are an integral part of the heteropolytungstate but they are not structurally equivalent

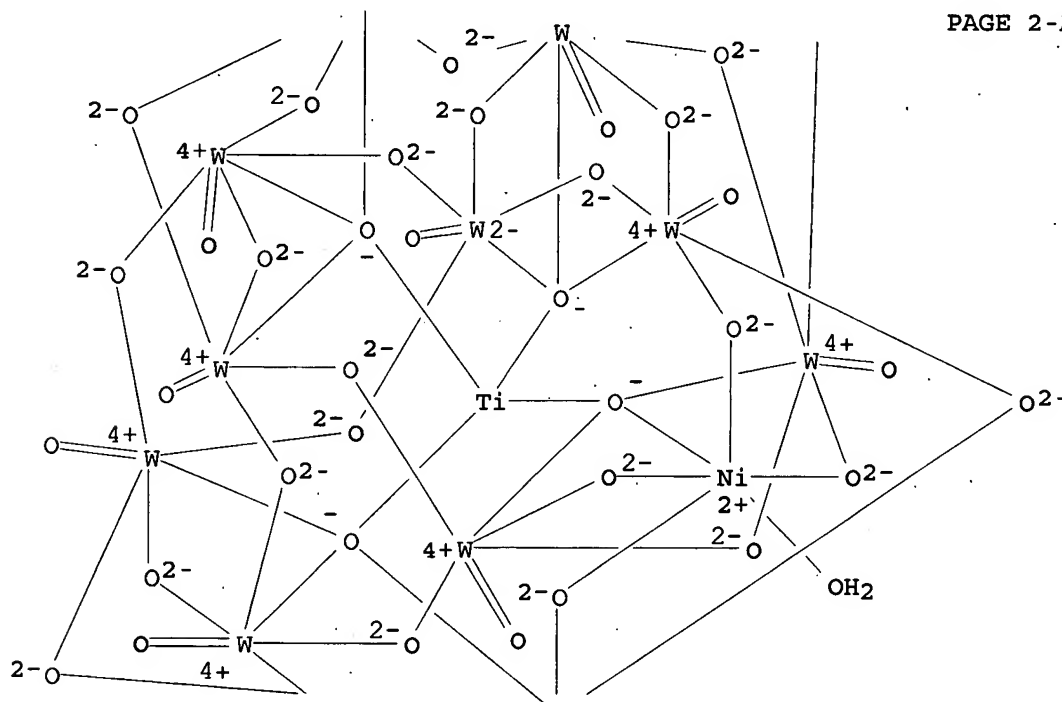
IT 79503-59-6
(reactions of, with cation exchangers, structure in relation to)

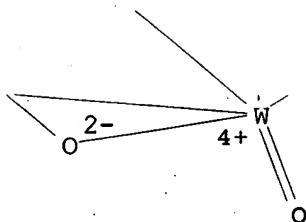
RN 79503-59-6 HCAPLUS

CN Titanate(6-), (aquanickelate)(eicosa- μ -oxoundecaoxoundecatungstate)tetra- μ -oxotetra- μ 4-oxo-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



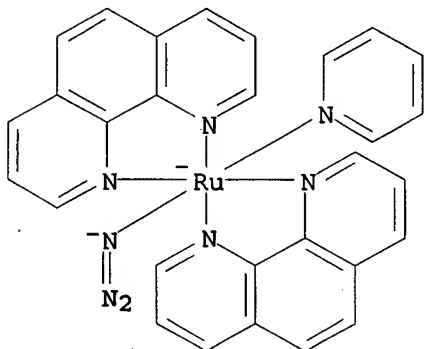


PAGE 3-A

● 6 K⁺

- CC 78-7 (Inorganic Chemicals and Reactions)
 ST tungstonickelotitanate structure cation exchange;
 nickelotitanotungstate structure cation exchange; titanate
 tungstonickelo structure cation exchange
 IT Cation exchange
 (of tungstonickelotitanates)
 IT Hydrolysis
 (acid, of tungstonickelotitanates in presence of cation
 exchangers)
 IT 104848-45-5P
 (formation of, in reactions of pentatungstonickelotitanate with
 cation exchangers)
 IT 104737-96-4P
 (formation of, in reactions of undecatungstonickelotitanate with
 cation exchangers)
 IT 79503-59-6 80533-93-3 81543-72-8
 (reactions of, with cation exchangers, structure in
 relation to)
- L27 ANSWER 29 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1985:494812 HCAPLUS
 DOCUMENT NUMBER: 103:94812
 TITLE: Redox properties of bis(1,10-
 phenanthroline)(pyridine)ruthenium(II) complexes
 AUTHOR(S): Lawrance, Geoffrey A.
 CORPORATE SOURCE: Dep. Chem., Univ. Newcastle, Newcastle, 2308,
 Australia
 SOURCE: Polyhedron (1985), 4(5), 817-20
 CODEN: PLYHDE; ISSN: 0277-5387
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 ED Entered STN: 22 Sep 1985
 AB The redox properties of a series [Ru(phen)₂(py)X]_n⁺ cations
 (phen = 1,10-phenanthroline; X = py, NH₃, Cl, Br, I, CN, SCN, N₃ and
 NO₂) were investigated in MeCN. Two reversible reduction steps are seen
 at -1.35 and -1.6 V vs. Ag/AgCl; the invariance of these processes
 with the X-group is indicative of electron addition to mol. orbitals
 mainly of phenanthroline ligand π* origin. Irreversible
 multi-electron redns. follow below -2.20 V. The Ru(II)/Ru(III) couple
 is seen as a reversible wave near +0.8 V vs. a normal H electrode,
 from calibration with ferrocene, except in the cases of the NO₂ and
 SCN complexes, where rapid reactions involving these ligands occur.
 IT 97698-36-7
 (electrochem. redox reactions of system containing, in acetonitrile,
 electronic spectrum in relation to)

RN 97698-36-7 HCAPLUS
 CN Ruthenate(2-), azidobis(1,10-phenanthroline-N1,N10)(pyridine)- (9CI)
 (CA INDEX NAME)



CC 72-2 (Electrochemistry)
 Section cross-reference(s): 73, 78
 IT 97698-20-9 97698-21-0 97698-22-1 97698-23-2 97698-24-3
 97698-25-4 97698-26-5 97698-27-6 97698-28-7 97698-29-8
 97698-30-1 97698-31-2 97698-32-3 97698-33-4 97698-34-5
 97698-35-6 97698-36-7 97698-37-8
 (electrochem. redox reactions of system containing, in acetonitrile,
 electronic spectrum in relation to)

L27 ANSWER 30 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1985:480827 HCAPLUS

DOCUMENT NUMBER: 103:80827

TITLE: Quaternary oxotungstates(VI). Sodium lithium
 ditungstate (Na₆Li₂[W₂O₁₀] - a ditungstate

AUTHOR(S): Betz, T.; Hoppe, R.

CORPORATE SOURCE: Inst. Anorg. Anal. Chem., Justus-Liebig-Univ.,
 Giessen, D-6300, Fed. Rep. Ger.

SOURCE: Zeitschrift fuer Anorganische und Allgemeine
 Chemie (1985), 522, 11-22
 CODEN: ZAACAB; ISSN: 0044-2313

DOCUMENT TYPE: Journal

LANGUAGE: German

ED Entered STN: 07 Sep 1985

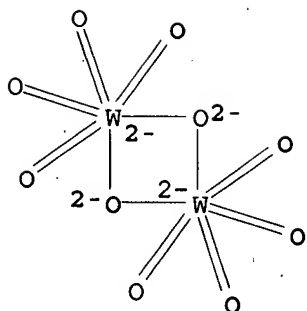
AB Na₆Li₂[W₂O₁₀] was prepared by annealing mixts. of WO₃, Na₂O, and Li₂O
 with W:Na:Li = 1:3.1. The crystals are triclinic, space group
 P.hivin.1, with a 784.66(11), b 602.53(7), c 563.81(11) pm, α
 106.784(14), β 114.548(14), γ 91.082(13)°, Z = 2,
 d.(x-ray) = 4.92, d.(exptl.) = 4.85 g cm⁻³, and R = 8.32%. The
 structure may be described as a distorted derivative of the NaCl-type.
 The Madelung part of lattice energy, effective coordination
 nos., via mean fictive ionic radii, are calculated and discussed.

IT 97642-55-2P

(preparation, crystal structure, Madelung part of lattice energy and
 effective coordination nos. of)

RN 97642-55-2 HCAPLUS

CN Tungstate (W20108-), dilithium hexasodium (9CI) (CA INDEX NAME)



●2 Li⁺

●6 Na⁺

CC 78-6 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 97642-55-2P

(preparation, crystal structure, Madelung part of lattice energy and effective coordination nos. of)

L27 ANSWER 31 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1983:415373 HCAPLUS

DOCUMENT NUMBER: 99:15373

TITLE: The first oligooxoplumbate(IV). Potassium lithium oxoplumbate (K₂Li₁₄[Pb₃O₁₄])

AUTHOR(S): Brazel, B.; Hoppe, R.

CORPORATE SOURCE: Inst. Anorg. Anal. Chem., Justus-Liebig-Univ., Giessen, D-6300, Fed. Rep. Ger.

SOURCE: Zeitschrift fuer Anorganische und Allgemeine Chemie (1982), 493, 93-103
CODEN: ZAACAB; ISSN: 0044-2313

DOCUMENT TYPE: Journal

LANGUAGE: German

ED Entered STN: 12 May 1984

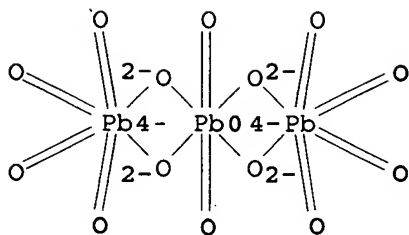
AB K₂Li₁₄[Pb₃O₁₄] was prepared by heating a 1:1.5:7 K₂PbO₃-PbO₃-Li₂O mixture at 560° for 20 d to obtain a powder or 580-595° for 90-200 d to obtain single crystals in a sealed Ag cylinder. K₂Li₁₄[Pb₃O₁₄] is orthorhombic, space group Immm, with a 12.7990(9), b 7.9446(4), c 7.2620(4) Å, Z = 2, d.(x-ray) = 4.59, d.(exptl.) = 4.63, R = 6.67%. The structure is characterized by a triple-octahedron group [Pb₃O₁₄]. The Madelung part of the lattice energy, the effective coordination nos., and the effective ionic radii were calculated

IT 86050-78-4P

(preparation, crystal structure and crystal lattice energy of)

RN 86050-78-4 HCAPLUS

CN Plumbate (Pb₃O₁₄16-), tetradecalithium dipotassium (9CI) (CA INDEX NAME)



●2 K⁺

●14 Li⁺

CC 78-2 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 86050-78-4P

(preparation, crystal structure and crystal lattice energy of)

L27 ANSWER 32 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1983:226817 HCAPLUS

DOCUMENT NUMBER: 98:226817

TITLE: "Fragmentation" and "aggregation" in lead oxides.
Oligooxoplumbate(IV) K₂Li₆[Pb₂O₈]

AUTHOR(S): Brazel, B.; Hoppe, R.

CORPORATE SOURCE: Inst. Anorg. Annal. Chem., Justus-Liebig-Univ.,
Giessen, D-6300, Fed. Rep. Ger.

SOURCE: Zeitschrift fuer Anorganische und Allgemeine
Chemie (1983), 497, 176-84

CODEN: ZAACAB; ISSN: 0044-2313

DOCUMENT TYPE: Journal

LANGUAGE: German

ED Entered STN: 12 May 1984

AB K₂Li₆[Pb₂O₈] was prepared by heating a K₂PbO₃-Li₂O-PbO₂ mixture (K:Li:Pb = 1:3:1) in a Ag bomb under vacuum at 660° for 120 d.

K₂Li₆[Pb₂O₈] is triclinic, space group P_hivin.1, with a 6.9720(9), b 5.9252(6), c 5.9312(7) Å, α 88.05(1), β 107.94(1),

γ 107.30(1)°; Z = 1, d.(x-ray) = 4.95, d.(exptl.) = 4.91

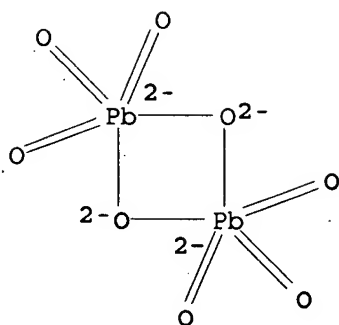
g cm⁻³, R = 5.07%, R_w = 4.59%. The K₂Li₂[Pb₂O₈] structure consists of a [Pb₂O₈] unit in which each Pb atom is surrounded by five O atoms in a distorted trigonal bipyramidal environment. The Madelung part of the lattice energy and the effective coordination nos. are calculated

IT 86005-95-0P

(preparation, crystal structure, Madelung constant and effective coordination nos. of)

RN 86005-95-0 HCAPLUS

CN Plumbate (Pb₂O₈-), hexalithium dipotassium, stereoisomer (9CI) (CA INDEX NAME)



● 2 K⁺

● 6 Li⁺

CC 78-2 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 86005-95-0P

(preparation, crystal structure, Madelung constant and effective coordination nos. of)

L27 ANSWER 33 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1977:23835 HCAPLUS

DOCUMENT NUMBER: 86:23835

TITLE: Analysis of the vibrational spectra of complexes with a double oxygen bridge

AUTHOR(S): Nikol'skii, A. B.; Bedrina, M. E.; D'yachenko, Yu. I.

CORPORATE SOURCE: USSR

SOURCE: Vestnik Leningradskogo Universiteta, Seriya 4: Fizika, Khimiya (1976), (3), 92-7
CODEN: VLUFBI; ISSN: 0024-0826

DOCUMENT TYPE: Journal

LANGUAGE: Russian

ED Entered STN: 12 May 1984

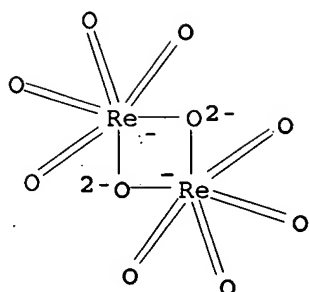
AB The normal vibrations of binuclear complexes of known structure of D_{2h} symmetry were calculated to study the characteristic frequency of vibrations of the double O-bridged bond. The characteristic frequency region of the stretching vibration of this bond was assigned to 500-700 cm⁻¹. The possibility of the identification of the bridge structure by using the vibrational spectra, on the basis of the calcn. for models with different structures, but of close stoichiometry is discussed. The presence of a double O-bridged bond was identified in the mol. of the complex [Ru₂O₆py₄], of yet unknown structure, on the basis of the interpretation of the IR spectrum.

IT 22724-10-3

(IR spectrum of)

RN 22724-10-3 HCAPLUS

CN Rhenate (Re₂O₁₀6-), hexasodium (9CI) (CA INDEX NAME)



● 6 Na⁺

CC 73-3 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)

IT Infrared spectra
(of coordination complexes with double oxygen bridges)

IT Coordination compounds
(vibrational spectra of, with double oxygen bridges)

IT 22443-17-0 22724-09-0 22724-10-3 27816-73-5 38976-95-3
61374-80-9
(IR spectrum of)

L27 ANSWER 34 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1972:106055 HCAPLUS

DOCUMENT NUMBER: 76:106055

TITLE: Complexes with 2,2'-bipyridine negative ion. II.
Sodium 2,2'-bipyridinetetracarbonylchromium,
-molybdenum, and -tungsten

AUTHOR(S): Kaizu, Youkoh; Kobayashi, Hiroshi

CORPORATE SOURCE: Dep. Chem., Tokyo Inst. Technol., Tokyo, Japan

SOURCE: Bulletin of the Chemical Society of Japan (1972), 45(2), 470-7

CODEN: BCSJA8; ISSN: 0009-2673

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 12 May 1984

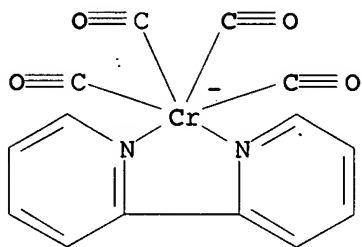
AB Bipyridinetetracarbonylchromium, -molybdenum, and -tungsten and their related complexes were reduced with Na in THF. Some products in the 1st stage of reduction were isolated. On the basis of the electronic absorption spectrum and the ESR, the complex formed in the reduction was concluded to be a complex coordinated by the mononeg. ion of bipyridine. Metal d_σ orbital in the complex is still higher than the bipyridine π* orbital, even if it is fairly lowered by a pos. charge arising from the metal-to-carbonyl back donation. Trapped electrons in the bipyridine π* orbital are, however, readily transferred into the d_σ orbital depending on the mol. environment. This gives rise to the formation of a pentacoordinate complex or complex dimer by evolving CO.

IT 28987-28-2 28987-29-3 29132-20-5
36581-41-6 36581-42-7 36581-43-8
36632-04-9 36632-05-0 36632-06-1
36632-07-2 36632-08-3 36632-09-4
(ESR and electronic spectrum of, structure in relation to)

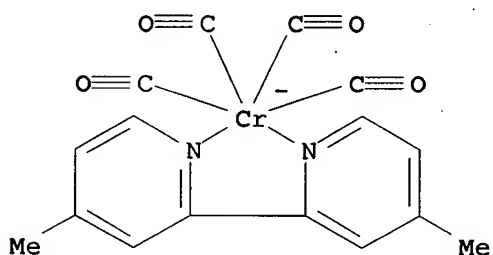
RN 28987-28-2 HCAPLUS

CN Chromate(1-), (2,2'-bipyridine-N,N')tetracarbonyl-, sodium, (OC-6-22)-

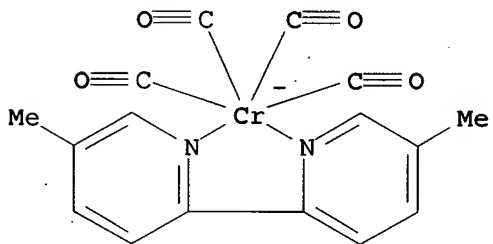
(9CI) (CA INDEX NAME)

● Na⁺

RN 28987-29-3 HCAPLUS
 CN Chromate(1-), tetracarbonyl(4,4'-dimethyl-2,2'-bipyridine-N,N')-,
 sodium, (OC-6-22)- (9CI) (CA INDEX NAME)

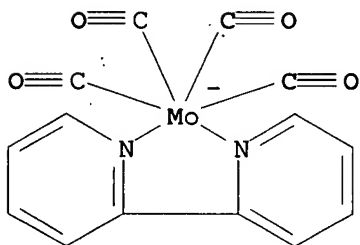
● Na⁺

RN 29132-20-5 HCAPLUS
 CN Chromate(1-), tetracarbonyl(3,3'-dimethyl-2,2'-bipyridine-N,N')-,
 sodium, (OC-6-22)- (9CI) (CA INDEX NAME)

● Na⁺

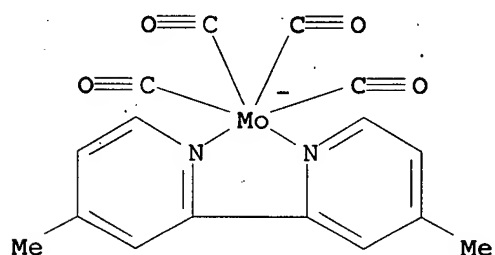
RN 36581-41-6 HCAPLUS
 CN Molybdate(1-), (2,2'-bipyridine-κN1,κN1')tetracarbonyl-,

sodium, (OC-6-22) - (9CI) (CA INDEX NAME)

● Na⁺

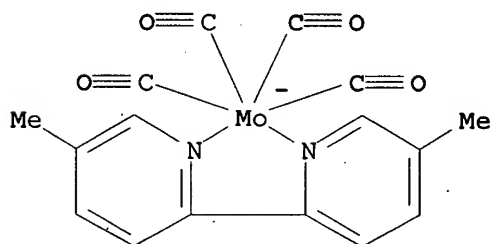
RN 36581-42-7 HCAPLUS

CN Molybdate(1-), tetracarbonyl(4,4'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22) - (9CI) (CA INDEX NAME)

● Na⁺

RN 36581-43-8 HCAPLUS

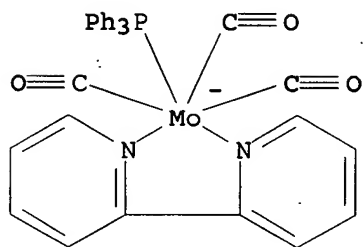
CN Molybdate(1-), tetracarbonyl(5,5'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22) - (9CI) (CA INDEX NAME)

● Na⁺

RN 36632-04-9 HCAPLUS

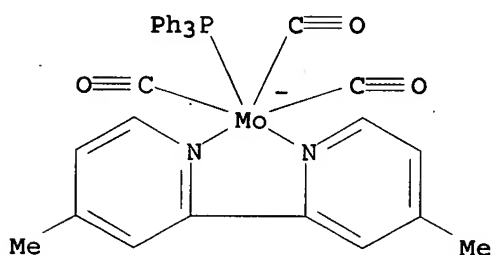
CN Molybdate(1-), (2,2'-bipyridine-N,N')tricarbonyl(triphenylphosphine)-, sodium, (OC-6-22) - (9CI) (CA INDEX NAME)

sodium (9CI) (CA INDEX NAME)

● Na⁺

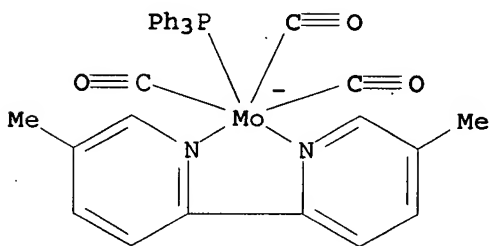
RN 36632-05-0 HCAPLUS

CN Molybdate(1-), tricarbonyl(4,4'-dimethyl-2,2'-bipyridine-N,N')(triphenylphosphine)-, sodium (9CI) (CA INDEX NAME)

● Na⁺

RN 36632-06-1 HCAPLUS

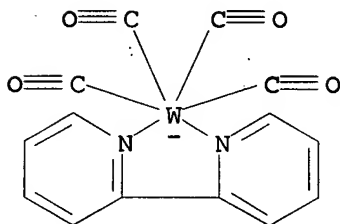
CN Molybdate(1-), tricarbonyl(5,5'-dimethyl-2,2'-bipyridine-N,N')(triphenylphosphine)-, sodium (9CI) (CA INDEX NAME)

● Na⁺

RN 36632-07-2 HCAPLUS

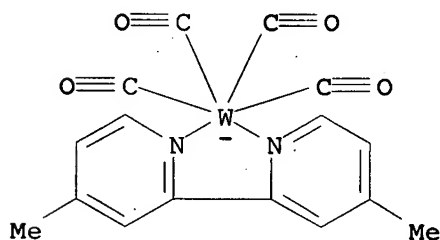
CN Tungstate(1-), (2,2'-bipyridine-N,N')tetracarbonyl-, sodium,

(OC-6-22) - (9CI) (CA INDEX NAME)

● Na⁺

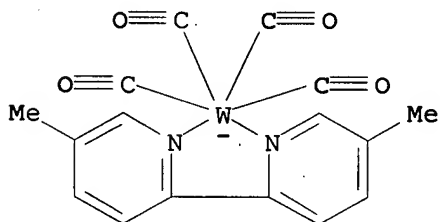
RN 36632-08-3 HCAPLUS

CN Tungstate(1-), tetracarbonyl(4,4'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22) - (9CI) (CA INDEX NAME)

● Na⁺

RN 36632-09-4 HCAPLUS

CN Tungstate(1-), tetracarbonyl(5,5'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22) - (9CI) (CA INDEX NAME)

● Na⁺

CC 73 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)

Section cross-reference(s): 78

IT 28987-28-2 28987-29-3 29132-20-5
36581-41-6 36581-42-7 36581-43-8
36632-04-9 36632-05-0 36632-06-1
36632-07-2 36632-08-3 36632-09-4

(ESR and electronic spectrum of, structure in relation to)

L27 ANSWER 35 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1970:505018 HCAPLUS

DOCUMENT NUMBER: 73:105018

TITLE: Complexes coordinated by the
2,2'-bipyridine negative ion. I. Synthesis of
sodium 2,2'-bipyridinetetracarbonylchromium

AUTHOR(S): Kaizu, Youkoh; Kobayashi, Hiroshi

CORPORATE SOURCE: Dep. Chem., Tokyo Inst. Technol., Tokyo, Japan

SOURCE: Bulletin of the Chemical Society of Japan (1970), 43(8), 2492-4

CODEN: BCSJA8; ISSN: 0009-2673

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 12 May 1984

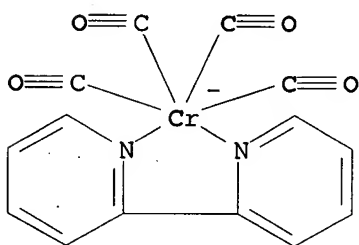
AB Bipyridinetetracarbonylchromium was reduced by Na metal in THF. The 1st stage product of the reduction, which showed a spectrum similar to that of Na bipyridine (Na+bipy-), was isolated. The complex was Na[Cr(CO)4bipy]. The electronic absorption spectrum and the ESR indicate the complex formed in the reduction was coordinated by the mononeg. ion of bipyridine and should be named sodium 2,2'-bipyridine(1-)tetracarbonylchromium(0).

IT 28987-28-2P 28987-29-3P 29132-20-5P

(preparation of)

RN 28987-28-2 HCAPLUS

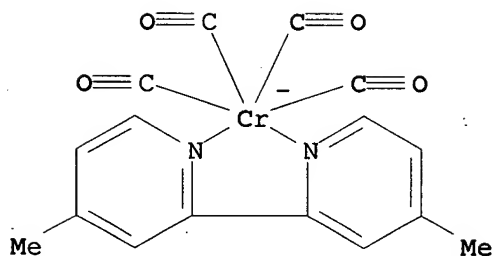
CN Chromate(1-), (2,2'-bipyridine-N,N')tetracarbonyl-, sodium, (OC-6-22)-(9CI) (CA INDEX NAME)



● Na⁺

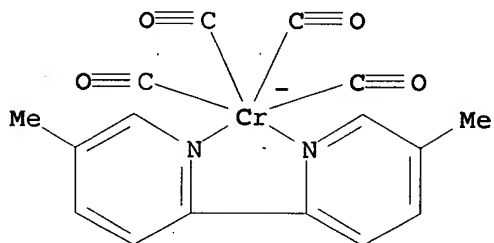
RN 28987-29-3 HCAPLUS

CN Chromate(1-), tetracarbonyl(4,4'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22)-(9CI) (CA INDEX NAME)

● Na⁺

RN 29132-20-5 HCAPLUS

CN Chromate(1-), tetracarbonyl(3,3'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22)- (9CI) (CA INDEX NAME)

● Na⁺

CC 78 (Inorganic Chemicals and Reactions)

IT 366-18-7DP, 2,2'-Bipyridine, chromium complexes 1134-35-6DP,
 2,2'-Bi-4-picoline, chromium complexes 1762-34-1DP,
 6,6'-Bi-3-picoline, chromium complexes 28987-28-2P
 28987-29-3P 29132-20-5P
 (preparation of)

L27 ANSWER 36 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1970:85752 HCAPLUS

DOCUMENT NUMBER: 72:85752

TITLE: A 2,2'-bipyridyl-substituted
 decacarbonyldimolybdate(-I)-anion with a
 metal-metal bond

AUTHOR(S): Lehnert, Guenter; Behrens, Helmut; Lindner,
 Ekkehard

CORPORATE SOURCE: Inst. Anorg. Chem., Univ. Erlangen-Nuernberg,
 Erlangen, Fed. Rep. Ger.

SOURCE: Zeitschrift fuer Naturforschung, Teil B:
 Anorganische Chemie, Organische Chemie, Biochemie,
 Biophysik, Biologie (1970), 25(1), 106-7
 CODEN: ZENBAX; ISSN: 0044-3174

DOCUMENT TYPE: Journal

LANGUAGE: German

ED Entered STN: 12 May 1984

AB Reduction of $(\text{bipy})(\text{CO})_2\text{Mo}(\text{CO})_2\text{Mo}-(\text{CO})_2(\text{bipy})$ (where bipy = 2,2'-dipyridyl) with Na in tetrahydrofuran in the presence of catalytic amts. of bipy gave $\text{Na}_2-[(\text{bipy})(\text{CO})_3\text{MoMo}(\text{CO})_3(\text{bipy})]$ (I). The degree of oxidation of Mo in I was determined by reaction with aqueous

HCl in tetrahydrofuran and IR spectroscopy. I is soluble in tetrahydrofuran, Me_3CO , and MeCN and showed electrolytic properties in them. Because of the instability of I as a solid and in solution even at -40° , elec. conductivity measurements were not reproducible.

Comparisons with $[\text{Mo}_2(\text{CO})_{10}]^{2-}$ indicate a C_{3v} -pseudo symmetry for I.

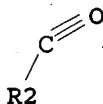
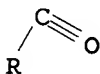
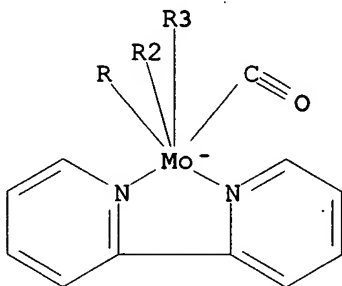
IT 25685-68-1P

(preparation of)

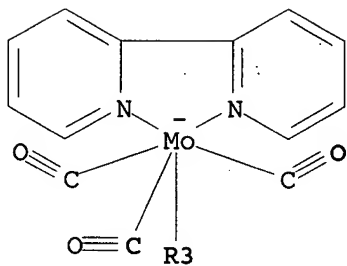
RN 25685-68-1 HCAPLUS

CN Molybdate(2-), bis(2,2'-bipyridine)hexacarbonyldi-, disodium (8CI)
(CA INDEX NAME)

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●2 Na⁺

CC 78 (Inorganic Chemicals and Reactions)
IT 25685-68-1P
(preparation of)

=> d his nofile

(FILE 'HOME' ENTERED AT 10:00:36 ON 05 OCT 2007)

FILE 'REGISTRY' ENTERED AT 10:00:44 ON 05 OCT 2007

ACT LEE935/A

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L1          SCR 2040 AND 1918
L2          SCR 2043 OR 2017 OR 2021 OR 2026
L3          STR
L4          552687 SEA SSS FUL L3 AND L1 NOT L2
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L5          STR
L6          50 SEA SUB=L4 SSS SAM L5
L7          STR L3
L8          STR L7
L9          STR L8
L10         STR
L11         0 SEA SUB=L4 SSS SAM L10
L12         STR L3
L13         8 SEA SUB=L4 SSS SAM L12
L14         26623 SEA SUB=L4 SSS FUL L5
L15         50 SEA SUB=L14 SSS SAM (L7 OR L8 OR L9)
L16         26623 SEA SUB=L14 SSS FUL (L7 OR L8 OR L9)
L17         10 SEA SUB=L16 SSS SAM L12
L18         263 SEA SUB=L16 SSS FUL L12

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FILE 'HCAPLUS' ENTERED AT 10:14:39 ON 05 OCT 2007

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L19         112 SEA ABB=ON PLU=ON L18
L20         95 SEA ABB=ON PLU=ON L19 AND (1840-2002)/PRY,AY,PY
L21         0 SEA ABB=ON PLU=ON L20 AND CAT/RL
L22         1 SEA ABB=ON PLU=ON L19 AND CAT/RL
L23         0 SEA ABB=ON PLU=ON L20 AND PHARM?/SC,SX
           D L20 85 HITSTR
L24         12 SEA ABB=ON PLU=ON L20 AND CAT?
L25         2 SEA ABB=ON PLU=ON L20 AND POLYMER?
L26         24 SEA ABB=ON PLU=ON L20 AND COORDINAT?
L27         36 SEA ABB=ON PLU=ON (L21 OR L22 OR L23 OR L24 OR L25 OR
           L26)
L28         27914 SEA ABB=ON PLU=ON L14
L29         2499 SEA ABB=ON PLU=ON L28(L)CAT/RL
L30         388 SEA ABB=ON PLU=ON L29 AND POLYMERI?
L31         336 SEA ABB=ON PLU=ON L29(L)PREP/RL
L32         29 SEA ABB=ON PLU=ON L31 AND L30
L33         29 SEA ABB=ON PLU=ON L32 NOT L27

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